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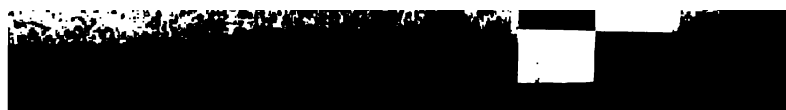
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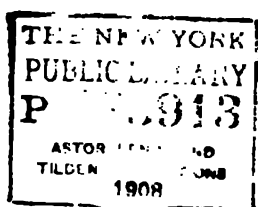









BOROUGH OF TORQUAY.



Annual Report
OF THE
MEDICAL OFFICER OF HEALTH,
Sixteenth Report on the Sanatorium,
the Sanitary Inspectors Reports,
SCHOOL ATTENDANCE OFFICERS REPORTS,
AND
METEOROLOGICAL REPORT
for 1900.





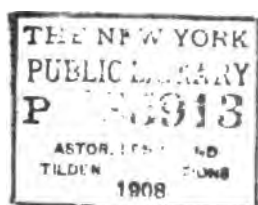


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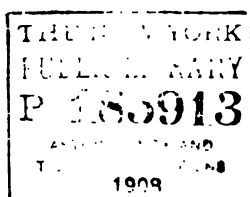
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Borough of Torquay.

ANNUAL REPORT OF THE Medical Officer of Health For 1900.

MR. MAYOR, ALDERMEN, AND COUNCILLORS,—

I beg to submit my Annual Report for 1900, which is the twenty-third I have made for the Urban District of Torquay.

Hitherto my duty has been to work on the figures supplied by the census of 1891, but during the past year a great alteration has been effected, inasmuch as St. Mary-Church and part of Cockington have now been amalgamated with Torquay, and this necessitates a recalculation in respect of the area and population of the enlarged borough.

The area within the new boundaries of the borough is 3,879 acres.

In 1891 the population was as follows :—

Torquay	...	...	25,488
St. Mary-Church	...	...	6,846
Cockington	...	...	1,717
Total	...	...	34,051

But during the process of amalgamation it was found desirable to exclude the rural portions of St. Mary-Church and Cockington, and I have not been able to ascertain the exact population of these portions. Perhaps it may be 200 or 250, and this would bring the total down to 33,800. But in the course of the past ten years hundreds of houses have been built and occupied in Cockington, and very many in St. Mary-Church and Torquay ; and consequently I think that 36,060 would be a safe estimate on which to calculate in this report. Fortunately a fresh census will soon be made, and our doubts set at rest.

As I have been hitherto Medical Officer of Health for St. Mary-Church as well as Torquay, I have all the papers and figures wherewith to compile this report ; and Dr. Morgan, who was Medical Officer of Health for Cockington until November 9th last, has supplied me with his papers and past annual reports, so that as far as statistics are concerned I have all the necessary material for drawing up the first annual report for the enlarged Borough of Torquay.

BIRTH RATE.

During 1900 there were 559 births, viz., boys, 301 ; and girls, 258. This yields a rate of 15·5 per 1,000.

The birth rate for England and Wales in 1900 was 28·9.

DEATH RATE.

The number of deaths registered was 488, or a rate of 13·6 per 1,000. This rate, however, is the gross and needs correction, because 58 deaths occurred among non-residents, and after deducting these the nett total will be 430, or a rate of 12 per 1,000.

The death rate for England and Wales in 1900 was 18·3.

I now wish to draw your attention to the following table, which gives the comparative results for the five years previous to 1900 ; and an explanation is necessary why five, instead of ten years as usual. Although all the statistics necessary for Torquay and St. Mary-Church are at hand, those for Cockington exist only from November, 1894, as previous to this date Cockington belonged to Newton Abbot Rural Sanitary District, and as far as I know no separate calculations or reports were made on its account.

It will be noticed that the number of births has a marked tendency to diminish, very nearly 100 less than in 1895, and 67 less than the average for five years.

But a considerable improvement is shown in the number of deaths occurring in children under one year of age, there being 32 less than in 1895, and 21 less than the average for five years. It is also satisfactory to notice that the total number of deaths has very much diminished : nearly 100 less than in 1895, and 61 less than the average for five years.

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[REDACTED]

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CAUSES OF DEATH.	DEATHS IN WHOLE DISTRICT AT SUBJOINED AGES.							Non-residents.	Nett result.	Deaths in Public Institutions.
	All ages.	under 1	1 and under 5	5 and under 15.	15 & under 25.	25 & under 65.	65 & up- wards			
Small-pox										
Measles	2	1		1					2	
Scarlet Fever										
Whooping-cough	1	1							1	
Diphtheria and Membranous croup										
Croup										
Fever { Typhus										
Enteric										
Other continued										
Epidemic influenza	21		1			7	13	4	17	
Cholera										
Plague										
Diarrhoea	13	11				1	1	2	11	1
Enteritis	3	3						1	2	
Puerperal fever										
Erysipelas										
Other septic diseases	2				1	1			2	
Phthisis	64	1		2	20	39	2	26	38	24
Other tubercular diseases	12	1	4	4		3			12	
Cancer, malignant disease	29				16	13		1	28	2
Bronchitis	42	6	4			5	27	3	39	2
Pneumonia	21	7	2			7	5	2	19	1
Pleurisy		3		1		1	1	1	2	1
Other diseases of respiratory organs	6					4	2		6	
Alcoholism										
Cirrhosis of liver	9					9			9	1
Veneral diseases										
Premature birth	15	15							15	
Diseases and accidents of parturition										
Heart diseases	56		1			24	31	10	46	4
Accidents	10	1	1			7	1	1	9	1
Suicides	1						1		1	
All other causes	178	23	8	1	2	49	95	7	170	4
All causes	488	70	21	9	39	170	179	58	430	41

The zymotic death rate is '44, as compared with 1'25 in 1899.

Although this new arrangement of classifying the causes of death into thirty-two divisions, instead of twenty-one as hitherto, is a distinct improvement, it has one drawback, viz., it is almost impossible to compare the details with those of previous years, but I will endeavour to do so in the more salient points.

MEASLES AND WHOOPING COUGH.

In the first place there is a significant absence of a heavy mortality from measles and whooping cough. This year only three deaths are credited to these most fatal and unmanageable diseases, instead of thirty-nine last year.

INFLUENZA.

There was a serious epidemic of influenza in the early part of the year, with a fatal result in twenty-one instances; but how many other sufferers were rendered more or less miserable for life, we shall never know.

DIARRHŒA AND ENTERITIS.

Sixteen deaths were ascribed to these two diseases, which is much higher than usual. The Local Government Board have issued fresh regulations in respect of the term diarrhœa, and these have received the support of the Incorporated Society of Medical Officers of Health. Medical practitioners have been in the habit of using a variety of terms to account for a fatality in which diarrhœa has had more or less to do, and this has led to much confusion. In future it is to be hoped that these terms will be disused, and diarrhœa must mean epidemic diarrhœa and nothing else; and enteritis must be understood to stand for inflammatory disease of the intestines. When diarrhœa simply occurs in the course of some other disease, the death should be ascribed to such.

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There have been fewer deaths than usual ascribed to Phthisis this year, and this is due I think to the new sub-division "other tubercular diseases." Together these two divisions have seventy-six deaths, which is about the average previously entered under phthisis alone. During the past year there has been sent to each

household where a death from phthisis has taken place one of the circulars issued by the "National Association for the Prevention of Consumption and other Forms of Tuberculosis," with an offer to fumigate the room occupied by the deceased. Many have accepted this invitation, and formalin has been employed; some replied that disinfection by sulphur had already been effected, but in too many instances no notice was taken of the circular. This is much to be regretted, but we must persevere, and continue in what is, after all, the education of the public in this most important question.

CANCER, MALIGNANT DISEASE.—This is a new division and a very proper one, and surely not before it was wanted. The public has of late been much exercised in the matter of phthisis and consumption; but I strongly suspect there will be some outcry about the prevalence of cancer. There have been twenty-nine deaths from the various forms of cancer, or nearly one in seventeen of the total mortality.

BRONCHITIS, PNEUMONIA, AND PLEURISY

Contribute sixty-six deaths, which is somewhat less than usual, seventy-three being the average for five years. This may be accounted for by the very mild spring and winter.

ALCHOLISM.

This is another fresh division, and a very useful one. Hitherto it has been customary to assign all diseases of the liver, whether due to cirrhosis or not, to "all other causes." I am unable to say if nine deaths from this cause is more or less than usual.

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DISEASES SUBJECT TO NOTIFICATION.

The following new table will be of interest, inasmuch as it shows how little notifiable disease we had last year.

NOTIFIABLE DISEASE.	CASES NOTIFIED IN TORQUAY IN 1900.						
	At all Ages.	At Ages—Years.					
		Under 1.	1 to 5.	5 to 15.	15 to 25.	25 to 65.	65 and upwards.
Small-pox							
Cholera							
Diphtheria	8	1		1	3	3	
Membranous croup ..	7			3	1	3	
Erysipelas	36		2	30	3	1	
Scarlet fever							
Typhus fever				1	2	4	
Enteric fever	7						
Relapsing fever							
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Totals	58	1	2	35	9	11	

Thirty-three of these patients were isolated in hospital, viz., one of diphtheria, and thirty-two from scarlatina.

DIPHTHERIA.

In six of these cases defects in the sanitary condition of the home were found, in one none were detected, and one case was imported.

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Each house has been examined, and the room occupied by the patient fumigated. Four houses were very unhealthy, and in three nothing wrong was detected.

SCARLATINA.

Of the thirty-six cases three were imported, and the others were of local origin or infection, though very difficult to trace. They were all very mild in character, and in no instance, owing to prompt removal, did the infection spread to a second case; nor has there been a "return case."

ENTERIC FEVER.

Three of the cases were undoubtedly imported, and in the homes of three ample defects were found; in one only neither history or defect existed that could account for the case. It is a good deal to say for the sanitation of a town of thirty-six thousand inhabitants, that only four cases of typhoid fever occurred in twelve months; all were mild and there was no fatality.

INFECTIOUS DISEASES AND SCHOOL ATTENDANCES.

During the past year I have had to advise that Torwood, St. Matthias', and St. John's Schools should be closed on account of measles; and that Ellacombe Infant and St. Matthias' Schools be closed because of an outbreak of mumps.

WATER SUPPLY.

At last I am able to report that every house on the watershed has been emptied, and that no human being lives thereon. The farm buildings, cowsheds, and stables where not already pulled down are empty, and homes for those who look after the property have been built in safe positions off the watershed. Although the past summer and autumn have been exceptionally dry, and the supply of water in the reservoirs reached a very low level, yet the quality of the water was satisfactory, and no complaints were



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The number of deaths registered was 488, or a rate of 13·6 per 1,000. This rate, however, is the gross and needs correction, because 58 deaths occurred among non-residents, and after deducting these the nett total will be 430, or a rate of 12 per 1,000.

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Scarlet fever ..	13	11				1	1	2	11	1
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Septic diseases ..	2				1	1			2	
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Malignant disease ..	12	1	4	4		3			12	
Ischaemic	29				16	13		1	28	2
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brought to my notice. It will take some years yet before the results of the agricultural use of the watershed quite disappears from the water, but that it will gradually reach the highest standard of purity I have not the least doubt. I have tested samples of water from twenty-one public wells, and with one exception found no reason to doubt their purity.

SALE OF FOOD AND DRUGS ACT.

Samples have been taken and submitted to the County Analyst of the following articles :—Tea, 6 ; milk, 29 ; sugar, 6 ; flour, 6 ; butter, 12 ; Mustard, 6 ; ice cream, 4 ; beer, 15 ; sweets, 5, and all were reported to be sound and free from adulteration. I am indebted to Mr. Roberts, Superintendent of the County Police, for his promptness in taking these samples, especially in the last two cases. As soon as the accounts of arsenical poisoning from beer appeared in the Medical papers, I went to Mr. Roberts and asked him to at once make a raid, and as far as possible to include the products of all the various breweries which supply Torquay. He promptly did so, and the results were reported to your Sanitary Committee long before the circular of the Local Government Board directing such a proceeding was issued. The five samples of cheap sweets were taken, and submitted at the same time.

ICE CREAM MANUFACTORY.

In July I visited the places where the peripatetic ice cream vendors prepare their wares, so as to ascertain under what circumstances this delicacy is produced.

I must begin by describing the process of converting milk into ice cream. Milk is boiled with eggs, sugar, flavouring, and a little corn flour, and then put aside to cool ; and this cooling must be effected naturally. The mixture when cold is put into a metal vessel and stirred violently, either by hand power or steam engine, and while being stirred the vessel is surrounded by a composition of ice and salt. When sufficiently frozen and set the lid of the vessel

is fitted, and the ice and salt around is renewed if necessary, and so handed out to the carts or barrows for sale in the streets.

Altogether I visited four places, and all were kept by Italians.

A made his goods in a stable, and where I expect the cooling process went on at night time. I also saw the room where he boiled the ingredients, and certainly I should not like to eat anything prepared in that room, or by that cook.

B manufactured his ware in a common lodging house; the boiling was performed in a boiler devoted to other purposes on washing day; and the cooling took place in the back yard of a by no means savoury looking house.

C also worked in a stable and cart shed, and the cooling place was the loft where a chaff cutter was worked. Here there was a steam engine to do the stirring, and evident signs of a good deal of capital being employed in the business.

D made his ices in a woodshed, where he saws wood when ices are not required; and the cooling took place in the wash house, no matter what was hanging up to dry.

Now as milk is the principal constituent in ice cream, I did not see why the Dairy and Cowshed Act could not be invoked; and very soon one stable was shut up, another was reconstructed and rendered suitable for its new purpose, and the other places seen to in respect of cleanliness.

But generally speaking, the manufacture of penny ices is not carried on under satisfactory surroundings; nor are the people who make them acquainted with ordinary notions on the subject of cleanliness. Perhaps in 1901 I may be able to look into this matter more closely.

DAIRIES, COWSHEDS, AND MILKSHOPS ORDERS.

A new series of regulations were compiled and passed last year, and which will effect a better control over this important trade.

I very much regret that during the process of amalgamation of St. Mary-Church and Cockington with Torquay, it was found necessary to exclude the rural portions. Very little of the milk sold in the Borough is produced here; it all comes from outside. In the excluded districts there were very many dairies and dairy farms, and over these we now have no control whatever. I am strongly of opinion that the people who consume the milk should be able to supervise the manner in which it is handled and sent into the town, and generally to watch its progress from the cow to the consumer.

NEW DRAINAGE WORKS.

The sewerage and laying on water to the district of Barton has made great progress. When completed it will affect seventy-seven houses, and two hundred and thirty inhabitants. This will be a most judicious expenditure of about seven thousand pounds.

BAKEHOUSES.

I have inspected fifty-nine bakehouses, and have found but slight reason to complain of their condition.

DISTRICT INSPECTION.

I have made several general district inspections, and certain portions have been carefully and completely overhauled. The details of this work will be found in Mr. Watson's report.

NOTIFICATION OF PLAGUE.

On receipt of a notice from the Local Government Board, circulars were sent to each medical practitioner in the Borough, calling on him to notify any cases of plague which might be met with in his practice. I need hardly say that we have heard nothing of such cases, nor do we expect to.

I append the sixteenth annual report on the Sanatorium, and remain,

Mr. Mayor and Gentlemen,

Your obedient servant,

PAUL Q. KARKEEK, M.R.C.S., & L.S.A.,

Medical Officer of Health.

January 29th, 1901.



BOROUGH OF TORQUAY.

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THE MEDICAL OFFICER'S SIXTEENTH REPORT ON THE SANATORIUM

For the Year ending 31st March, 1900.

TO THE CHAIRMAN OF THE SANITARY COMMITTEE.

SIR,

At the close of the financial year, 1898-1899, there were two patients under treatment, and from that date to March 28th, 1900, forty fresh cases were admitted, making a total of of forty-two patients who have been inmates of the Sanatorium during the year 1899-1900.

Two were cases of diphtheria, and the others were all Scarletina. The diphtheria patients recovered, and so did the Scarletina cases, except one, who died of Tubercular Meningitis, and five who were still under treatment on March 28th, 1900.

Three of the patients, being visitors, paid for their residence and maintenance according to the scale of charges, four came from hotels, one from a charitable home, two from the Torbay Hospital, one from a common lodging house, four from villas, and the

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Mr. Mayor and Gentlemen,

Your obedient servant,

PAUL Q. KARKEEK, M.R.C.S., & L.S.A.,

Medical Officer of Health.

January 22nd, 1901.

The average cost per diem of each patient has been 4s. 10½d. as compared with 5s. 6d. last year.

The inventory has been gone through and replacements made where necessary.

The resident staff have given every satisfaction to the patients, the medical practitioners attending the cases, and myself, and I may add that I have not received a complaint for the whole year.

I remain, Sir,

Your obedient servant,

PAUL Q. KARKEEK, M.R.C.S. & L.S.A.,

Medical Officer of Health.

August 1st, 1900.

BOROUGH OF TORQUAY.

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ANNUAL REPORT

OF

THE SANITARY INSPECTOR.

*To His Worship the Mayor, Aldermen, and Councillors
of the Borough.*

GENTLEMEN,

I have the privilege to make to you my Twenty-Third Annual Report on the various branches of Sanitary duties which devolved upon me during the year 1900.

The work of house examination, whether for a Sanitary Certificate, or in the ordinary course, becomes each year more arduous, owing to the exacting nature of modern sanitary requirements, and the severity of the tests applied, to secure reliable results.

The following figures denote the nature of the improvements effected in the one hundred and twenty-five villas and ordinary dwellings which I examined, and to which three hundred and twenty-one tests were applied, two hundred and ninety being by the smoke machine.

- 89 New Sanitary conveniences were fixed, and
- 64 Flushing cisterns were needed and supplied.
- 38 New external soil pipes fixed.

- 68 Ditto ventilated and other ventilators.
- 62 Fresh air inlets provided.
- 95 Inspection chambers were constructed.
- 85 Intercepting traps fixed, and
- 277 Gully or other approved traps.
- 64 Waste pipes disconnected or trapped.
- 35 Sketch plans taken of new drainage systems.
- 87 New pipe drains were laid.
- 23 Masonry drains or traps, and old tanks abolished.
- 83 Choked drains were cleared.
- 4 Yards paved or cemented.
- 2 Well water samples taken.
- 3 Areas were excavated in front of houses and drained.
- 5 Bedrooms were provided with ventilators.
- 7 Manure or ash pits were covered or provided.
- 5 New urinals were built, three in hotels.
- 5 Water wasting cases were reported.
- 18 Better supplies of drinking water were provided.
- 10 Overcrowding cases were abated,
- 48 Nuisances from pigs and fowls and manure were dealt with.
- 94 Premises were cleansed or fumigated, and disinfectants supplied.
- 4 Smoke nuisances were modified on complaint.
- 320 Letters were written on the business of the Department, and
- 22 Preliminary notices were served, and no legal ones were found necessary.
- 44 Fees for the smoke test were paid.

Omitting the testings and the number of houses tested, these figures produce a total of 1,273 sanitary operations carried out on 389 separate premises.

Periodical visits were made to the Common Lodging Houses, Slaughter House, Marine Stores, and places where offensive trades are carried out, and where nuisances existed steps were immediately taken to secure abatement.

I also inspected the Milkshops, Dairies, and Cowsheds in the old Borough, and, in addition, those situate in the Chelston Ward during the last days of the year; also one of the cowsheds much complained of at St. Mary-Church, but as I have not been able, on several visits after dark, to find cows in the sheds, it does not seem possible to take legal action.

I may observe that the great majority of the Milkshops and Dairies were found in a creditable state of cleanliness, but some few needed an alteration of the structural arrangements.

The number of new buildings erected in Torquay during 1900 was 24, chiefly in the Upton district, some in the new thoroughfare, Morgan Avenue, and a few at Crownhill and Ellacombe ; also near Trinity and the Scotch Churches ; all were duly surveyed by me prior to occupation, and most of them were quite satisfactory.

The most interesting case of house inspection during the year is that of Villa Syracuse, which early in January was placed at the disposal of an influential Committee for the purpose of a Home for Soldiers, convalescent from the South African War. I was requested to go over the handsome villa and report on its sanitary condition. As I found that the War Department exacted a high state of the drainage system and of all internal arrangements before consenting to send on a single patient, I bestowed the utmost care on the matter, and though the Committee were most anxious to get patients into the Home, I felt compelled to hold back the certificate till nearly the end of February, since when the Institution has been more or less full, and no word of complaint has reached me of any failure of the sanitary system reconstructed under my supervision.

I am, Mr. Mayor and Gentlemen,

Yours obediently,

CHARLES MACMAHON,

Cert. San. Inst. ; Asso. M.B.I.P.H. ;

Chief Sanitary Inspector and Surveyor of New Buildings.

BOROUGH OF TORQUAY.

Assistant Sanitary Inspector's Report.

*To His Worship the Mayor, Aldermen, and Councillors
of the Borough.*

GENTLEMEN,

I beg to submit to you my Third Annual Report for the year ending December 31st, 1900.

Ninety-two tenement and other houses and premises, with a population of five hundred and five, have been inspected under the house to house inspection, and in sixty-one instances the drainage of the houses were tested.

In connection with this work, seventy-two notices have been served to abate the various nuisances found on such inspection. Sixty-four of these notices were preliminary, and eight legal.

In one instance it was found necessary to take magisterial proceedings against the owner of two houses, to abate nuisances under the Public Health Act. In each case a conviction was obtained, and a fine of £1 1s. and all costs imposed.

The Districts inspected were :—

Tor Square Cottages (part), Hoxton Road (part),
Pimlico (part).

Ninety-six houses and premises have been visited and inspected upon complaint or by request, and fifty-six smoke or hydraulic tests applied to drains, and fifty-five notices served to abate nuisances.

Two hundred and fifty-eight visits of inspection have been made to premises where work was in progress, and also one hundred and fifty-four smoke, and seventy-two hydraulic, tests applied to drains after alterations to same.

Twelve houses have been examined and reported upon and drainage tested for certificates on the payment of the 10s. fee, and upon the completion of the necessary work the certificates were granted, except in one instance, where the work was not carried out according to the requirements. Five of the houses were "Homes for the treatment of Consumption," and were re-drained.

Thirty houses and premises in Barton have been inspected in regard to the connection of the drains to the new sewer, and the laying on of water from the main.

Also the drains of twelve houses in St. Mary-Church and their connections to the sewer have been tested, and six notices served to remedy defects.

Fifteen rooms have been disinfected where 2 typhoid fever, 5 scarlet fever, 5 diphtheria, and 3 erysipelas cases occurred ; also 20 rooms have been disinfected after death from consumption, and 2 rooms after death from cancer and influenza, a total of 37 disinfections.

The houses have been examined and the drainage tested in twelve instances, and twelve notices were served to remedy defects found.

Seven premises illegally occupied as cellar dwellings have been closed.

The total number of notices served during the year was one hundred and forty-five; one hundred and thirty-five were preliminary, and ten legal.

Two hundred and ninety-two letters have been written on the business of the department.

I am, Mr. Mayor and Gentlemen,

Yours obediently,

WILLIAM B. WATSON,

Cert. San. Inst.; Sanitary Inspector.

BOROUGH OF TORQUAY.

SCHOOL ATTENDANCE.

Annual Reports

For the Year ending 31st December, 1900.

TO THE SCHOOL ATTENDANCE COMMITTEE OF THE
BOROUGH OF TORQUAY.

GENTLEMEN,

The usual returns received from the head teachers of the Elementary Schools in that part of the Borough for which I am your attendance officer shew results as follows, viz. :—

	Average Number on Books.	In Average Attendance.	Percentage on Average Attendance.
Year 1900.	3116	2628·8	84·3
„ 1899.	3111	2564·8	82·4

Increase 5 Increase 64·0 Increase 1·9

Year 1900. The percentage on average attendance of Boys was 88·1 ;
Girls, 84·96 ; and Infants, 81·24.

The returns for 1900 shew there are 933 Boys, 898 Girls, and 1,285 Infants average number on the school registers, and in average attendance 821·7 Boys, 763·3 Girls, and 1,043·8 Infants. Included in the number of infants there are 516 who are under five years of age.

The attendances at Ellacombe, St. John's, and Ilsham Schools were adversely affected through sickness amongst the children at different parts of the year, principally measles and chicken pox.

The School Attendance Committee held 11 ordinary meetings during 1900, and dealt with 407 complaints ; 257 warning letters were sent to parents of irregular children, 7 notices of illegal employment issued, 67 summonses were ordered, and 3,801 visits were made by your officer to the parents of children who were absent from school.

The results of prosecutions were 41 fines, 3 boys committed to the Truant School, 21 attendance orders granted, 1 case withdrawn, and 1 dismissed with a caution. The latter was again prosecuted and fined for the same child during the year.

The fines inflicted were two of 7s 6d., two of 6s., twenty of 5s., five of 4s., eight of 3s. 6d., one of 3s., and three of 2s. 6d. each. Total amount of fines, £8 5s. 6d.

In addition to the three boys committed to the Truant School by the Magistrates, two were returned there for their second and one for his third time, through having broken the terms of their licenses.

There are at present two boys on board the Mount Edgecumbe Training Ship, one in the Devon and Exeter Industrial School, one in the Somersetshire Industrial Home, and one in the Plymouth Truant School, who were sent to the institutions named on the application of your Committee.

I beg respectfully to thank the Magistrates and School Attendance Committee for their kind support, and remain,

Your obedient Servant,

School Attendance Officer.

Dated January 18th, 1901.

During the year 257 warnings and 7 employers' notices have been issued and proceedings taken in 67 cases, with results as follows, viz. :—

	No. of Cases.	Fined.	Dismissed.	Withdrawn.	Committed to Truant Industrial School.	School.	£	s.	d.
Under Bye-laws ..	36	35	P	—	—	—	6	19	6
Attendance Orders granted ..	22	21	orders granted	1	—	—			
Non-compliance with Attendance Orders ..	9	—	—	—	3	—	1	6	0
Total amount of Fines							£8	5	6

BOROUGH OF TORQUAY.

Return of Average Number of Children on Books of the undermentioned Elementary Schools, with the Average Attendance, &c., for the year ending 31st December, 1900.

NAME OF SCHOOL.	BOYS.		GIRLS.		INFANTS.				REMARKS.
	Average No. On Books.	In Average Attendance.	Average No. On Books.	In Average Attendance.	Average No. On Books.	In Average Attendance.	Number under five years of age.		
Tor	176	162	177	153.7	150	126.1	52		
Upton	186	163.0	179	158.0	89	71.9	47		
Torwood	63	54.9	65	58.5	68	47.0	31		
S. Luke's, Pimlico ..	116	99.0	81	70.0	102	82.0	49		
S. Luke's, Rock Road (Infants.)					82	66.6	17		
Ellacombe	300	261.0	279.5	230.4	327	266.0	138	Infants' School closed four weeks through an outbreak of Mumps.	
Victoria Park (Infants.)					89.9	76.4	37		
S. John's	42	36.0	75	56.0	67	55.0	28	Closed four weeks—Measles.	
Ilham	26	22.6	25	21.4	32	24.2	11	Closed for six weeks—Measles. And three weeks—Mumps.	
S. James' (Infants.)					255	910.0	92		
Roman Catholic ..	24	22.8	17	15.3	24	18.8	14		
TOTALS ..	933	821.7	898	763.3	1285	1043.0	516		

REPORT

For the Year ending 31st December, 1900.

*To the School Attendance Committee of the Borough
of Torquay.*

GENTLEMEN,

In presenting to you this, my First Annual Report, I beg to state that the returns shew there are 95 Boys, 104 Girls, and 78 Infants on the School Registers ; and an average attendance of Boys 93, or 96 per cent. ; Girls 93, or 88 per cent. ; Infants 63, or 80 per cent. 33 of the infants are under 5 years of age ; average attendance 22, or 66 per cent.

I am, Gentlemen,

Yours obediently,

A. HUGO,

School Attendance Officer.

METEOROLOGICAL REPORT

FOR THE YEAR 1900.

*To the Worshipful the Mayor, Aldermen, and Councillors
of the Borough of Torquay.*

GENTLEMEN,

I have the honour to submit the Annual Report of the Meteorological Observations taken at the Borough Observatory, Chapel Hill, and Cary Green during the year 1900.

The observations were taken daily in accordance with the rules of the Royal Meteorological Society.

The Instruments have been in continuous use, and have been kept in good working order throughout the year.

The station was visited in August by Mr. Marriott, the Assistant Secretary of the Royal Meteorological Society, who examined and approved the temperature, rain, and sunshine instruments, and by Mr. R. H. Curtis, representing the Meteorological Office. Both these gentlemen visited and approved the new site in the Princess Gardens, selected by the Sanitary Committee for the instruments removed from Chapel Hill, but Mr. Marriott suggested that the enclosure on Cary Green should be retained for the present, in order that the new readings might be carefully checked. This recommendation was adopted, and the Cary Green readings are still recorded.

The usual Climatological Observations have been furnished monthly to the Royal Meteorological Society, and general observations and full details as to rainfall to Mr. H. Sowerby Wallis for publication in "British Rainfall."

Full monthly reports, as read to the Council, have been sent to the Torquay Natural History Society, to the "Torquay

Directory" and "Times," to the "Western Morning News," and the "Western Daily Mercury," and have been posted at the stations in various parts of the town.

A weekly report of bright sunshine has been sent throughout the year to the Meteorological Office, for which the thanks of the Council have been returned; and the customary weekly return of general observations has been contributed to the "Torquay Directory." This has also been sent since June to the "Devon and Exeter Gazette." Notes, with reference to exceptional weather or special phenomena, have been supplied from time to time to the local press.

A daily telegraphic report of the day's weather, with detailed figures, has been furnished to papers as under. To those marked with an asterisk in the summer months only—"London Standard," "News," "Chronicle," and "Leader," "Western Morning News," "Western Daily Mercury," *"Manchester Guardian," *"Leeds Mercury," *"Bradford Observer," "Liverpool Post," "Journal of Commerce," "Sheffield Telegraph," "Glasgow Daily Mail," "Newcastle Chronicle," "Birmingham Post," "Bristol Mercury." Through this medium the many climatic advantages that we enjoy both summer and winter have been placed before thousands of readers, and I have abundant evidence that the reports and figures are carefully read by many who find their way to Torquay.

During the year weather reports have been regularly received from the Meteorological Office, and have been duly posted on Chapel Hill. These will now be more effectually shewn from the new office in the Princess Gardens.

A new Campbell-Stokes Sunshine Recorder has been recently purchased, and will be fixed upon the band stand on the Pier in order that readings may be carefully checked by those taken by a similar instrument retained at Chapel Hill.

I am, Gentlemen,

Your obedient Servant,

FREDK. MARCH.

THE INSTRUMENTS.

The following are the instruments and appliances in regular use, those marked with an asterisk being the property of the Torquay Natural History Society, and by them lent to the town :—

* The **Barometer** is a Fortin Standard and is read twice daily, at 9 am (local time) and at about 5 p.m. All readings are reduced to 32° F. and mean sea level, and are thus comparable with all readings similarly reduced.

*An **Aneroidograph**, by Richard Freres, gives in graphic manner the alternations of pressure.

There are two double louvered **Stevenson's Screens**, each containing **Dry**, and **Wet Bulb** and **Maximum** and **Minimum Thermometers**. The instruments are of Casella's make, and are so placed that the bulbs of the hygrometer are 4 feet above the level of the grass. One of these sets has been working throughout the year at Cary Green, where the official temperatures for the Meteorological Office and Royal Meteorological Society have been taken, the other at Chapel Hill.

A third ***Stevenson's Screen**, also double louvered, has been in position at Chapel Hill, and has held a ***Thermograph** or Self-recording Thermometer and an **Ozonometer**. The Ozone Test Papers and Scale used are Moffat's, and the principle on which the instrument works is the liberation of iodine by the action of ozone upon iodide of potassium contained in the paper, and the action of this

free iodine upon starch, in solution of which the paper has also been soaked. This is only a rough test, but it is the same for all stations, and is approximately correct.

***Solar Radiation Thermometers,** black bulb in vacuo and bright bulb in vacuo, are contained in a stand of their own, which has been placed on Chapel Hill.

The **Grass Minimum** is by Hicks, and was placed on grass at Chapel Hill about an inch above the ground. The position was not a good one, and it was no unusual thing in the summer to find the reading higher than that of the minimum thermometer in the screen.

The **Rain Gauges** are of copper by Casella and of Snowdon pattern. They were placed, one on Cary Green, one at Chapel Hill, with the upper edge 12 inches above the level of the ground.

The **Sunshine Recorders** are placed upon the roof of the office at Chapel Hill, 286 feet above mean sea level.

They are—

(1.) A Campbell-Stokes instrument, fitted with a $3\frac{1}{2}$ inch spherical lens of crown glass, and working on the principle of the burning-glass; and

(2.) A Twin Jordan Photographic Recorder, which works by the differentiation in colour effected by bright sunlight on specially prepared chemical paper.

The **Anemometer**, for registering the horizontal velocity and direction of the wind, is a Robinson self-recording embossing instrument by Casella. The cups are of 5-inch diameter, and are fixed on 12-inch arms at Chapel Hill,



4. The fourth part of the document discusses the implications of the results and the conclusions drawn from the study. It highlights the significance of the findings and their potential applications in the field.

5. The fifth part of the document provides a summary of the key points and a final conclusion. It reiterates the importance of the study and the need for further research in this area.



Chapel Hill Observatory, from the South.



Chapel Hill Observatory, from the North.

THE OBSERVATORY.

The Chapel Hill Observatory is built on limestone rock at the summit of the quarry, and at the back or N. side of the old ruined Chapel: about $\frac{3}{4}$ mile from the sea, overlooking Torbay and the English Channel. The ground level is 276 ft., and the top of the building 286 ft. above mean sea level. The part of the building immediately under the Sunshine Instruments is built of solid limestone to prevent vibration.

The latitude is $50^{\circ}29'$ N., and the longitude $3^{\circ}32'$ W. = to 14 minutes after Greenwich Mean Time.

The Cary Green Readings are taken 12 feet above mean sea level.

The Observatory is organised and maintained by the Town Council, and is under the supervision of the Royal Meteorological Society.

The several Barometers, Thermometers, and Rain Gauges have been verified at Kew Observatory, and regularly examined by a representative from the Royal Met. Society. Readings are all corrected for instrumental errors.

The Hygrometrical Results are deduced from the daily morning readings of the Dry and Wet Bulb Thermometers by means of Glaisher's Tables.

The averages for Sunshine are the result of 12 years', for Temperature and Rainfall of 24 years', and for Pressure of 16 years' observations.

DURATION OF BRIGHT SUNSHINE

In hours and tenths of an hour,

As recorded by the Campbell-Stokes' Standard Instrument.

1900.	Total Bright Sunshine.	Percentage Actual of Possible.	Difference from Average.	Greatest Amount in one day.	Date.	Percentage Actual of Possible.
January ...	61·8	23·8	— 0·5	7·2	7th	85·3
February ...	81·5	29·5	+ 1·6	8·3	11th	85·6
March	109·2	30·0	— 38·5	9·5	30th	75·0
April	195·5	47·7	+ 18·8	12·7	26th	88·4
May	248·1	52·2	+ 24·2	14·5	29th	91·2
June.....	194·5	40·0	— 47·9	14·5	26th	89·0
July	295·7	61·0	+ 86·0	15·0	7th	92·0
August.....	256·0	58·0	+ 53·7	13·7	12th	95·0
September..	186·9	50·0	+ 22·3	12·1	3rd	91·0
October ...	142·2	44·0	+ 28·5	9·7	18th	92·0
November..	87·2	33·0	+ 26·2	6·8	11th	75·0
December..	38·5	16·0	— 16·1	5·7	10th	74·0
Year...	1897·0	40·4	+ 158·5	15·0	July 7th	92·0

REMARKS.

A large amount of bright Sunshine was registered at Torquay during the year 1900. Though it fell short of the amount recorded in 1899—a remarkably bright year—by 141·9 hours, it was yet 158·5 hours above the average. In all there were 1897 hours of bright sunshine—an average of 5·2 hours per day—a record exceeded only by those of 1899 and 1892. The morning sunshine was 935·5 hours, and the afternoon sunshine 961·5.

Eight of the twelve months, including all the summer months except June, exceeded their respective monthly averages.

The brightest day was July 7th, on which 15 hours were registered, a percentage of 92, but the highest percentage of actual to possible sunshine, 95, was obtained later in the year, on August 12th.

The number of sunless days was 56, a proportion of 2 in 13. Bright sunshine was recorded *every day* in July and September, on every day but one in April and June, and on every day but two in May and August. December was the dullest month, with 15 sunless days.

DURATION OF BRIGHT SUNSHINE

In hours and tenths of an hour,

As recorded by the Jordan Photographic Twin Instrument.

1900.	Total Bright Sunshine.	Percentage Actual of Possible	Difference from Average.	Greatest Amount in one day.	Date.	Percentage Actual of Possible.	Sunless Days.
January ...	56·5	21·7	— 5·8	7·1	7th	83·3	12
February ...	80·2	29·1	+ 0·4	8·1	11th	83·5	10
March	111·2	30·6	— 36·5	9·7	30th	76·6	4
April	199·1	48·7	+ 22·4	12·4	26th	86·3	1
May	241·9	50·9	+ 18·0	14·3	29th	90·0	2
June.....	187·8	38·6	— 5·45	12·7	26th	78·0	1
July	290·4	59·6	+ 80·7	14·6	10th	89·6	—
August.....	243·1	54·9	+ 40·8	13·4	12th	92·9	2
September..	196·1	52·6	+ 31·4	11·9	3rd & 6th	89·5	—
October ...	134·7	42·6	+ 21·0	9·2	11th, 18th	87·2	3
November ..	81·2	30·8	+ 20·2	6·8	11th	75·0	7
December ..	35·6	15·2	— 18·9	5·5	10th	71·4	13
Year...	185·99	39·6	+119·2	14·6	Aug. 12th	92·9	55

REMARKS.

The total amount of Sunshine registered by the Jordan Recorder is 39.2 hours less than that by the Campbell-Stokes instrument, a difference of only $6\frac{1}{2}$ minutes a day, or 2 per cent on the total.

The monthly amount by the photographic method is greater, speaking roughly, in the spring and autumn of the year, viz., in March, April, and September, and less in the summer and winter. In September, particularly, the Observer noticed that a lot of late sunshine, quite bright and very dazzling, lost to the C.S. instrument, was picked up by the Jordan. He can only suggest that at these periods heat rays are refracted or absorbed by the cirrus clouds in the neighbourhood of the sun.

A comparison of the readings of these two Recorders is of great interest.

BAROMETRIC PRESSURE

In inches and thousandths.

Reduced to 32° F. and Sea Level.

1900.	<i>Mean of Month.</i>	<i>Difference from <i>Mean</i> of Month.</i>	<i>Highest Reading.</i>	<i>Date.</i>	<i>Lowest Reading.</i>	<i>Date.</i>
January ...	29·947	— 0·099	30·474	11th	29·173	3rd
February ...	29·566	— 0·461	29·978	9th	29·203	17th
March	30·011	+ 0·041	30·696	14th	29·156	19th
April	30·044	+ 0·181	30·560	19th	29·451	4th
May	29·969	+ 0·004	30·372	29th	29·433	3rd
June.....	29·949	— 0·066	30·235	1st	29·591	25th
July	30·040	+ 0·056	30·318	8th	29·661	2nd
August.....	29·981	+ 0·017	30·418	13th	29·443	3rd
September .	30·159	+ 0·146	30·547	12th	29·670	27th
October ...	30·037	+ 0·077	30·666	22nd	29·423	26th
November ..	29·753	— 0·190	30·371	19th	29·013	28th
December ..	29·967	— 0·033	30·583	16th	29·218	28th
Year...	29·952	— 0·028	30·696	Mar. 14th	29·013	Nov. 28th

REMARKS.

The mean barometric reading for the year was 29·952 inches, being 0·028 inch below the average for sixteen years, and 0·050 below the mean of 1899.

The highest reading taken was 30·696 on March 14th; the lowest, 29·013 on November 28th, shewing an extreme variation of 1·683 inches.

The highest reading taken in Torquay appears to be 30·896 on January 9th, 1896.

The highest monthly readings were taken in September, mean 30·159; and the lowest in February, mean 29·566.

The highest monthly range was 1·365 inch in December; the lowest were 0·644 in June, and 0·657 in July. It is interesting to compare these figures with the totals of horizontal velocity of wind, from which it will be seen that December was by far the stormiest month and June and July among the calmest.

RAINFALL

In inches and hundredths.

1900		Total Amount.	Difference from Average.	Wet Days.	Mean Wet Day Rainfall.	Greatest fall in 24 hours.	Date
January ...	*C. G.	5.36	+2.15	23	0.23	1.45	6th
"	†C. H.	5.73	+2.52	25	0.23	1.33	6th
February ...	C. G.	5.89	+3.22	20	0.29	1.13	14th
"	C. H.	6.08	+3.41	20	0.30	1.08	14th
March	C. G.	1.91	-0.57	13	0.15	0.42	21st
"	C. H.	1.85	-0.63	15	0.12	0.43	21st
April	C. G.	1.19	-1.19	11	0.11	0.33	3rd
"	C. H.	1.11	-1.27	11	0.10	0.30	3rd
May	C. G.	1.70	-0.32	9	0.19	0.42	2nd
"	C. H.	1.75	-0.27	10	0.18	0.49	2nd
June.....	C. G.	3.07	+0.88	15	0.20	0.53	14th
"	C. H.	3.29	+1.10	17	0.19	0.53	14th
July	C. G.	0.64	-1.81	7	0.09	0.17	31st
"	C. H.	0.72	-1.73	9	0.08	0.19	31st
August.....	C. G.	1.50	-1.27	11	0.14	0.46	6th
"	C. H.	1.64	-1.13	14	0.12	0.43	6th
September	C. G.	1.05	-1.31	8	0.13	0.32	26th
"	C. H.	1.06	-1.30	8	0.13	0.31	26th
October ...	C. G.	2.03	-2.10	17	0.12	0.61	4th
"	C. H.	1.64	-2.49	15	0.11	0.42	4th
November	C. G.	2.84	-1.10	20	0.17	0.45	5th
"	C. H.	3.13	-0.81	20	0.16	0.50	5th
December	C. G.	5.91	+2.24	26	0.23	0.78	30th
"	C. H.	5.42	+1.75	24	0.23	0.75	30th
Year.....	C. G.	33.09	-1.18	180	0.184	1.45	Jan. 6th
"	C. H.	33.42	-0.85	188	0.178	1.33	Jan. 6th

* Cary Green.

† Chapel Hill.

REMARKS.

The total amount of rain (including such snow and hail as fell) collected during the year was 33.09 inches, of which 17.16 inches, or more than half, fell in the months of January, February, and December. The rainfall of these three months and of June was above, of the other eight months below, the average. July was a particularly dry month, with only 7 days on which the rainfall was a hundredth of an inch or more, and a total rainfall of 0.64 inch, being 1.81 inch below the average for the month. Indeed, the total rainfall of July was exceeded in a single storm that burst in the early morning of this month of January, 1901. April, August, September, and October were also abnormally dry, the rainfall being about half only of the usual amount.

The rainfall for the year was 1.18 inch below the average of 24 years, and 1.81 inch below the rainfall of 1899.

There were only two days on which over an inch of rain fell; the heaviest fall of the year was 1.45 inch on January 6th.

SHADE TEMPERATURES.

Taken at 9 a.m. (Local Time).

1900.		Max. & Min. mean.	Difference from Average.	Range mean.	Maximum mean.	Minimum mean.	Highest.	Date.	Lowest.	Date.
		°	°	°	°	°	°		°	
Jan. ...	*C.G.	44.4	+2.5	8.8	48.8	40.0	55.2	8th	32.2	6th
"	†C.H.	43.4	—	8.0	47.4	39.4	52.7	8th	30.3	6th
Feb. ...	C.G.	41.1	-2.3	8.9	45.5	36.6	54.2	22nd	25.8	7th
"	C.H.	39.9	—	8.5	44.1	35.6	53.1	27th	25.3	7th
March.	C.G.	41.3	-2.7	9.7	46.1	36.4	56.2	12th	27.0	18th
"	C.H.	40.3	—	10.4	45.5	35.1	56.0	12th	23.9	18th
April ..	C.G.	48.5	+0.3	12.4	54.7	42.3	63.4	22nd	34.2	1st, 2nd
"	C.H.	48.2	—	14.2	55.3	41.1	67.4	22nd	33.0	2nd, 27th
May ...	C.G.	51.9	-1.3	11.1	57.4	46.3	68.4	29th	40.4	14th
"	C.H.	51.5	—	13.8	58.4	44.6	69.9	29th	37.4	17th
June...	C.G.	57.9	-1.1	11.0	63.4	52.4	70.2	4th	48.2	2nd, 23rd, 25th
"	C.H.	57.7	—	13.4	64.4	51.0	72.8	5th	46.1	2nd
July ...	C.G.	63.8	+2.3	13.4	70.5	57.1	79.7	25th	49.2	3rd, 8th
"	C.H.	63.6	—	17.0	72.1	55.1	82.5	25th	46.8	8th
Aug. ...	C.G.	61.0	-0.7	13.1	67.5	54.4	74.4	14th	48.5	25th
"	C.H.	60.3	—	14.6	67.6	53.0	79.4	14th	45.9	25th
Sept. ...	C.G.	58.9	+0.7	13.9	65.8	51.9	72.9	8th	45.7	7th
"	C.H.	58.1	—	15.7	65.9	50.2	73.5	8th	43.3	20th
Oct. ...	C.G.	53.1	+1.5	11.3	58.7	47.4	63.4	7th	37.2	22nd
"	C.H.	52.6	—	12.1	58.6	46.5	63.5	7th, 8th, 9th	35.0	22nd
Nov. ...	C.G.	48.1	+0.7	9.7	52.9	43.2	62.2	4th	33.9	11th
"	C.H.	47.1	—	9.7	51.9	42.2	60.0	4th	30.2	22nd
Dec. ...	C.G.	47.8	+4.5	8.9	52.2	43.3	56.3	4th	33.7	3rd
"	C.H.	46.9	—	8.8	51.3	42.5	56.2	5th	33.7	1st
Year	C.G.	51.5	+0.4	11.0	57.0	45.9	79.7	July 25th	25.8	February
	C.H.	50.8	—	12.2	56.9	44.7	82.5	July 25th	23.9	March 1st

* Cary Green.

† Chapel Hill.

REMARKS.

The mean temperature of the air, which is the average of the maximum and minimum, for 1900 was $51^{\circ}5$ at Cary Green, and $50^{\circ}8$ at Chapel Hill. The Cary Green mean is $0^{\circ}4$ above the average for the last 25 years, and $1^{\circ}3$ below the mean temperature of 1899.

The mean maximum temperature for the year was $57^{\circ}0$ at Cary Green, and $56^{\circ}9$ at Chapel Hill; the mean minimum was $45^{\circ}9$ at Cary Green, and $44^{\circ}7$ at Chapel Hill, giving a mean range of $11^{\circ}0$ at Cary Green, and $12^{\circ}2$ at Chapel Hill.

The highest temperature recorded was $79^{\circ}7$ on July 25th. Other readings this day were:—Bath 82° , Dover 83° , Yarmouth 81° , Ramsgate 89° . The mean maximum temperature of Torquay during the heat wave of July was $73^{\circ}5$. The mean maximum temperature of other watering places during the same period was as under:—Bath $79^{\circ}1$, Bournemouth $77^{\circ}4$, Dover $81^{\circ}0$, Eastbourne $74^{\circ}0$, Leamington $76^{\circ}5$, Scarborough $73^{\circ}2$, Great Yarmouth $77^{\circ}8$, Ramsgate $85^{\circ}0$. These figures, taken from the "London Daily Chronicle" without selection, conclusively show how fallacious is the widely-spread idea that Torquay is "hot in summer." On the contrary, our readings, thanks to our westerly position, were during this excessively hot period among the lowest in the country, and were often 10° and 15° below those of the large towns, and of the East coast and inland watering places.

The lowest temperature recorded was $25^{\circ}8$ on February 7th, so that the extreme range of temperature for 1900 was $53^{\circ}9$.

SOLAR AND TERRESTRIAL RADIATION.

ON GRASS.

1900.	Solar Max. Mean	Highest.	Date.	Max. Solar Radiation.	Minimum mean.	Lowest.	Date.	Number of Days at 32° and below.	Mean Night period Vari- ation of Min. on Grass from Min. in
Jan. ...	66·4	85·3	28th	19·0	35·4	27·4	6th	9	-4·0
Feb. ...	69·4	94·2	27th	25·3	32·3	20·4	9th	16	-3·3
March..	82·1	102·7	14th	36·6	31·1	18·2	18th	16	-4·0
April ..	98·5	111·0	17th	43·2	36·5	26·5	2nd	8	-4·6
May ...	102·2	121·9	29th	43·8	41·6	33·9	12th	0	-3·0
June...	105·6	119·9	10th	41·2	48·6	43·3	1st, 18th	0	-2·4
July ...	116·4	127·5	26th	44·3	53·4	41·9	8th	0	-1·7
Aug. ...	109·3	117·8	16th	41·7	51·5	44·3	25th	0	-1·5
Sept ..	107·1	122·9	7th	41·2	48·0	41·6	20th	0	-2·2
Oct. ...	101·1	112·0	3rd	42·5	43·8	32·5	22nd	0	-2·7
Nov....	77·2	101·0	4th	25·3	39·2	28·8	22nd	6	-3·0
Dec. ...	63·1	79·9	10th	11·8	39·7	31·0	1st, 22nd	3	-2·8
Year	91·5	127·5	July 26th	34·7	41·8	18·2	Mar. 18th	59	-2·9

REMARKS.

The mean maximum solar temperature is taken with a sensitive maximum thermometer, which has the bulb and about an inch of the stem coated with dull lamp-black. The thermometer is enclosed in a vacuum tube and mounted four feet above the ground. The measure of solar radiation is found by subtracting the maximum reading of this instrument from the maximum of a shade thermometer, but the observation is imperfect and not of much value.

The mean minimum grass temperature is taken with a highly sensitive spirit minimum thermometer, placed horizontally on short grass.

The difference between the minimum thus taken and the minimum shade temperature gives the measure of terrestrial radiation. As already stated, the position of this instrument at Chapel Hill, on a limestone rock, was a bad one, and the radiation figures are probably too low.

There were 58 days of ground frost, of which 49 were after Christmas.

HUMIDITY, CLOUD, AND OZONE.

1900	HUMIDITY.			CLOUD.	OZONE.		
	Dry Bulb <i>mean.</i>	Wet Bulb <i>mean.</i>	Relative Humidity.	Cloud <i>mean</i> 1 to 10.	<i>Mean</i> Daily Amount.	Greatest Daily Amount	Least Daily Amount.
	°	°	%		%	%	%
January	44·9	43·0	85	7·7	67·4	90	10
February	41·3	39·4	84	6·8	52·6	85	5
March	42·0	38·8	76	6·8	56·6	85	10
April	50·3	46·5	74	5·8	52·7	80	20
May	53·0	49·6	78	5·5	57·6	85	35
June.....	59·1	55·0	76	6·5	60·0	85	25
July	66·2	60·6	70	5·0	52·4	80	5
August.....	62·3	57·9	75	4·9	41·0	70	10
September ...	61·1	57·3	78	4·6	54·0	70	5
October	54·9	51·4	78	6·7	59·8	75	40
November ...	48·2	45·8	81	6·9	53·0	70	10
December ...	48·3	46·6	88	7·9	57·1	80	5
Year.....	52·6	49·3	78	6·3	55·4	90	5

REMARKS.

The Dry Bulb Thermometer measures the temperature of the air at 9 a.m. The mean of this for the year was 52°·6 at Cary Green, and 51°·6 at Chapel Hill.

The Humidity of the air is reckoned from the difference between the Dry and Wet Bulb readings, in terms per cent. of the quantity necessary for saturation. The mean Humidity for 1900 was 78 %, or 0·4 % below the average for 24 years. As it is generally assumed that the air in Torquay is exceptionally moist, the following statistics relating to 1899 will be of interest:—

Mean Humidity at 9 a.m.		Mean Humidity at 9 a.m.	
TORQUAY	... 78 %	Ilfracombe	... 83 %
Southport	... 81	Brighton	... 79
Morecombe	... 84	Eastbourne	... 80
Harrogate	... 78	Weymouth	... 78
Llandudno	... 76	Newquay	... 84
Burton ...	... 80	Manchester	... 79
Lowestoft	... 87	London	... 76
Margate	... 82		

The mean daily amount of Cloud at 9 a.m. was 6·3, reckoned on the scale of 1—10.

The mean daily amount of Ozone was 55·4 % of the possible, varying from 5 % at the lowest to 90 % at the highest.

THE WIND.

DIRECTION AND VELOCITY.

In miles and tenths of a mile.

1900.	Total Horizontal Motion.	Mean Daily Velocity.	Mean Hourly Velocity.	Greatest Daily Velocity.	Mean Hourly Velocity of that day.	Greatest Velocity in One Hour.	Date.	Time.	Direction.	
									Southerly to Westerly	Northerly to Easterly
									<i>days</i>	<i>days</i>
January	8452	272·6	11·4	506	21·1	36·3	24th	3 to 4 p.m.	22	9
February	7188	256·7	10·7	600	25·0	35·0	16th	1 to 2 p.m.	13	15
March	5174	166·9	6·9	296	12·3	19·0	16th	1 to 2 a.m.	8	23
April	7306	243·5	10·1	631	26·4	38·0	11th	5 to 6 p.m.	19	11
May	6112	197·2	8·2	516	21·5	39·0	3rd	1 to 2 p.m.	17	14
June	6200	206·7	8·6	511	21·3	27·5	25th	5 to 6 a.m.	24	6
July	4722	152·3	6·3	327	13·6	25·0	6th	6 to 7 p.m.	20	11
August	6060	195·5	8·1	598	25·0	36·0	3rd	3 to 4 p.m.	23	8
September	4054	135·1	5·6	391	16·3	30·0	27th	2 to 3 a.m.	19	11
October	7360	237·4	9·9	469	19·5	25·0	6th	1 to 2 p.m.	27	4
November	6700	223·3	9·3	428	17·8	30·0	7th	1 to 2 a.m.	15	15
December	10280	331·6	13·8	970	40·4	59·0	28th	9 to 10 a.m.	25	6

REMARKS.

The total horizontal motion of the air for the year was 79,608 miles, which compares with 79,523 miles in 1899. This gives an average movement of 218·1 miles per day, and of 9·1 miles per hour.

The greatest daily velocity, 970 miles, was attained on December 28th, the greatest hourly velocity on that day being 59 miles from 9 to 10 a.m.

The prevailing winds, reduced to eight points of the compass, were as under :—

January, s.w.	July, s.w., n.w.
February, s.w., n.w.	August, s.w.
March, n.e., n.w.	September, s.w., n.e.
April, s.w.	October, w., s.w., n.w.
May, n.e., s.w.	November, n.w., s.w.
June, s.w.	December, s.w.

From this it will be seen that westerly winds prevailed for the greater part of the year, and that the wind was mainly from the S.W. during the winter months.

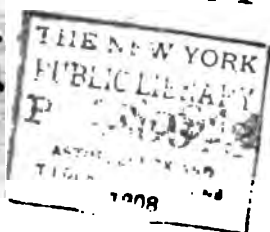




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12
BOROUGH OF TORQUAY.

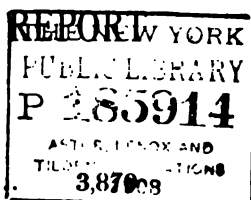


Annual Report
OF THE
MEDICAL OFFICER OF HEALTH,
Seventeenth Report on the Sanatorium,
The Sanitary Inspectors' Reports,
SCHOOL ATTENDANCE OFFICERS' REPORTS,
AND
METEOROLOGICAL REPORT
for 1901.

TORQUAY PUBLISHING CO., LTD., FLEET STREET.



MEDICAL OFFICER'S ANNUAL For 1901.



VITAL STATISTICS.

Area of the Borough in acres	...	...
Rateable value	...	£187,000
Population (Census 1901)	...	33,611
Average of population per acre	...	8.66
Number of houses inhabited	...	6,630
Average number of persons per house	...	5
Death rate 1901	...	15
Average death rate for previous six years	...	16.1
Nett death rate 1901	...	14.1
Average nett death rate for previous six years	...	14
Birth rate for 1901	...	16.5
Average birth rate for previous six years	...	18.4
Infant death rate 1901 (under one year) per 1,000 births	...	125.3
Average ditto for previous six years	...	142.5

The reason why statistics are only worked out for six years is the fact that previous to 1895 Chelston formed part of the Newton Rural Sanitary District, and as far as I am aware there are no separate reports and statistics in existence.

PHYSICAL FEATURES AND GENERAL CHARACTER OF THE DISTRICT.

These are of a highly diversified character, especially the central portions forming the Torquay promontory. In this district the two principal heights are the Warberry, 448 feet, and the Lincombe Hills, 372 feet, forming long ridges running N.E. and S.W., which are composed of Lower Devonian grits and slates. The lesser heights, such as the Braddons, Waldon, Park, and Chapel Hills are formed of Middle Devonian limestone, which rest above the grits and slates mentioned.

On each side of this central area, viz., at St. Mary-Church and Chelston, rocks higher in the Geological Scale for the most part prevail. These rocks belong to the Permian formation, and consist of beds of Breccia—a kind of conglomerate—and sandstones of a deep red colour, owing to the presence of peroxide of iron.

There is very little clay in any portion of the area, and what does occur is of the nature of Marl, and is confined to the lower levels of certain valleys or depressions, so that rain is not long retained on the surface, as it rapidly disappears through these rather pervious rocks and soils.

MR. MAYOR, ALDERMEN, AND COUNCILLORS,

I beg to submit my Annual Report for 1901, which is the twenty-fourth I have had the honour to write for the Urban Sanitary District of Torquay.

In making this report, I have endeavoured to follow the recent instructions of the Local Government Board, and consequently it differs somewhat from its predecessors.

POPULATION.

The Census of 1901.—Torquay, like many other towns, has had a surprise in the results of the recent census, and instead of an increase, a slight decrease has taken place. I have for years been telling you that the number of births is diminishing, and this has been assigned to various causes. But the peculiar proportions of the sexes in the town must have some influence on this subject. In 1891 there were 6,357 females more than males, and in 1901 this majority is increased to 6,977. The total of the recent census is 33,611.

If the population has been at a standstill, such is not the case in respect of distribution, for here there has been a most satisfactory and persistent improvement. In 1871 there was an average of 7·05 persons per house; in 1881 it was 6·92; in 1891 it was 6·09; and now in 1901 it is 5.

HOUSING OF WORKING CLASSES.

The working classes in Torquay have every opportunity of being well housed, and that they take advantage of this is clear from the fact that there are numbers of low rent houses being built. In other words, a supply to meet the demand. But this movement needs very careful supervision. The Local Government Board, in their instructions this year, lay stress on "Sufficiency of open space about houses," and no wonder. If there is one agency more potent than another in combating tuberculosis, it is a free play of air around the house. It is absolutely necessary on passing plans, that you exact the maximum open space in the rear, as well as in front of each building. It is distinctly laid down in the bye-laws how much space is to be reserved "*free from any erection thereon above the level of the ground.*" This is a most important matter for the occupants of the house; the exigencies of the building trade is a secondary consideration.

INSPECTION OF NEW BUILDINGS.

The drainage and arrangement of the sanitary requirements of all houses are carefully tested before occupation is permitted, but it is possible after even the most severe tests to find the work spoiled. I happened to visit a house in course of completion, where the drains had been passed an hour before my arrival, and found that a careless workman had tipped in the trench a load of heavy stones and smashed two of the drain pipes. This sort of thing happens frequently, I feel sure, but it may not always be found out until chokeage, and perhaps illness, is the result. I am quite certain that testing the drainage of houses is a much more difficult operation than is usually supposed, especially in old houses, where the whole line of drain has not been exposed.

NEW SEWERAGE WORKS.

The sewerage of the Barton district has at last been finished, and the relaying of certain portions of St. Mary-Church and Babbacombe carried out; consequently the designs of the late District Council have at last been completed. With some very few exceptions the whole of the houses in the borough are now connected with the water carriage system of your main drainage.

WATER SUPPLY.

I am pleased to be able to report satisfactorily on the condition of the water supply. By the removal of the farms and sweeping away the farmyards, the water has assumed quite a different character. Although there has been a drought in many places, the supply to Torquay and its customers has been uninterrupted, and not one complaint as to its quality has reached me for the whole year. This is very satisfactory to you, as owners of the water, and for the towns which buy the water from you. You have entered into negotiations respecting a water supply for Teignmouth, and this is mainly a question of engineering and finance; but there is one thing you can with safety guarantee, viz., an upland surface water so protected as to be quite free from pollution. The arable portions of the estate has been limited to such fields as are not on the watershed; and those on which grazing is allowed are separated from the streams and tributaries by a broad zone of free land, and between the two is a fence and deep ditch. When this arrangement has been completed, and only a small part remains without it, you will then have done all that is possible, and not in vain.

I have tested samples of water from ten public wells, and have had no reason to find fault with either.

MILK SUPPLY.

I have in at least three Annual Reports drawn attention to the urgent necessity for Urban communities exercising supervision over the farms, cowsheds, &c., from whence milk is sent into the town. On one occasion you communicated with the Local Government Board, but nothing came of it, although the law compels each sanitary authority to look after its own farms, &c. However, this year our neighbours in Plymouth initiated a movement which, I believe, will some day become the law of the land, although, perhaps, with certain modifications, to suit local and special conditions. This I had the pleasure of bringing before your Sanitary Committee, and at last it was adopted by the Council. It is not perfect as a scheme, but it is, at all events, a very good beginning.

An invitation was sent to every milk dealer who procured his supplies from outside the borough, offering to inspect the farms he was associated with. Where the farms, water, &c., were found to be satisfactory, their names and location would be published in conjunction with the milk dealers, so that the public would be able to know what milk was produced under favourable circumstances, and what was not. Of course, if a farmer or dealer refused to co-operate in the movement, the public would come to the conclusion that there was something to hide, and consequently unsatisfactory.

The milk sellers, with one exception, at once saw the advantage of an occasional inspection, and persuaded the farmers to allow me to visit their places.

The following are the proposals submitted to the farmers:—

BOROUGH OF TORQUAY.

In order to carry the accompanying regulations into effect, it is proposed :—

- 1.—To send circulars to all known suppliers of milk to Torquay, together with copy of the regulations, and invite them to notify the Medical Officer of Health of their willingness to comply.
- 2.—The Medical Officer of Health or a Sanitary Inspector would then visit the farms, enter the farm on the register if found up to the required standard ; or if alterations or improvements required, to suggest same, and when carried out, to register it.

- 3.—The list of dairy farmers thus registered will be published every six months, either by being advertised, or printed on hand-bills, to be distributed to consumers, or otherwise exhibited.
- 4.—Registered dairy farmers to be permitted to advertise in any way they may think proper the fact that their farms have been approved of by the Sanitary Committee.
- 5.—After farms have been registered, the Medical Officer of Health or his Inspector will visit the same occasionally, and if it be found that a licensee has failed to comply with either of the requirements, the same to be reported to the Committee, to be dealt with according to the circumstances of the case.
- 6.—If the Committee should decide to remove any particular farm from the register, the fact to be made publicly known to the consumers of the milk.
- 7.—The foregoing proposals to be carried out with a due regard to the small dairy farmer, so that whilst the health of the public may be safeguarded, the circumstances of the small dairy farmer may not be overlooked.

The following were the regulations alluded to :—

BOROUGH OF TORQUAY.

INSPECTION OF DAIRY FARMS

Any Dairy Farmer supplying Milk, etc., to the Inhabitants of Torquay, will undertake to carry out the following Regulations :—

- 1.—In the event of an employée or any person residing on or off the farm premises becoming ill, he or she is to be immediately isolated and certificate of Medical Practitioner at once obtained as to nature of illness and forwarded to the Medical Officer of Health, Torquay. Persons suffering from any Infectious or Contagious Disease to be at once removed.
- 2.—Milk carts never to be used for the carriage of dung, or any article of an offensive character.
- 3.—Milk carts, cans, dairy and all other utensils in connection with the business of the dairy to be kept perfectly clean.
- 4.—No milk to be stored or scalded in a dwelling-room.
- 5.—No milk for consumption to be taken from cows after calving until a proper period, viz. :—Seven days shall have elapsed.

- 6.—No milk to be supplied from cows whose udders are not in a perfectly healthy condition, and, if suspicious, notification to be at once sent to the Medical Officer of Health.
- 7.—Absolute cleanliness to be observed by the persons engaged in milking.
- 8.—The shippens and other premises to be kept properly lime-washed at frequent intervals, and premises generally kept thoroughly clean and wholesome; and no heap of manure is to be in such proximity to the dairy as will in the opinion of the Medical Officer of Health be liable to taint the milk.

The Medical Officer of Health to be satisfied as to the purity of the water used on the dairy farm.

Shippens to be kept in accordance with the provisions of the Dairies, Cowsheds, and Milkshops Order, 1899, as to ventilation, cubic space, drainage, and water supply.

Altogether I have visited fifty-two farms, on which were grazed at least seven hundred and thirty cows. I was received everywhere with courtesy and kindness, and most of the farmers expressed a desire to carry out any suggestion I might make. Some of the farms and cowsheds were perfect, and others were but make-shifts. The principal defects were dirt, want of white-wash, and bad paving; the first two can be remedied, the last will take time. I saw no instance of overcrowding, or anything approaching it. Some times the stalls were a little dark, and in some the ventilation might be improved. But it must be remembered that the cows in this part of Devon see but little of their stalls, except when being milked. Some farmers, and even those milking from twenty to thirty cows, assured me that they never keep their cows in at all; perhaps for a night or two owing to exceptional weather, but this very rarely. The general rule is to bring the cows in by night from the middle of December to the end of March. There is no question, however, but that the farmers desire to keep their beasts in the open as much as possible. This is very satisfactory, and, without any experimental evidence, I should be inclined to think that there would be very little tuberculosis among the South Devon dairy cows. None but hardy beasts would survive such treatment; delicate ones would soon be sent to the butcher, and thus only those which instanced the survival of the fittest would be kept to breed from.

At nearly every farm I tried a sample of water with Nessler's test, and although this is not analysis, it is better than nothing.

Altogether I am satisfied with the results of my tour of inspection. My interviews with the farmers must be repeated, and they will soon see that it is to their own interests to prevent the milk being contaminated.

A list of the registered farms is in preparation, and publication will follow in due course.

SALE OF FOOD AND DRUGS ACT.

The County Police have taken and submitted to the County Analyst the following samples:—Milk, 30, of which 3 were adulterated, one defendant was fined, and two dismissed; margarine, 1, genuine; butter, 8, of which 2 were adulterated, but the prosecution came to nothing; whiskey, 6, with 1 adulterated and the seller fined; 2 samples of gin and 2 of brandy, both pronounced genuine; 2 samples of rum, 1 was adulterated and the seller fined; 3 of coffee and 3 of pepper, all declared genuine. One dealer was fined for selling margarine not enclosed in a proper wrapper.

ICE CREAM TRADE.

I visited the places used by hawkers of ice cream, and found three satisfactory and one everything but satisfactory; indeed, the last place was unfit for preparing any kind of food for man. It was a stable with signs of recent use as such; it had a w.c. in one corner, and an open sink. The tenant was warned not to make ice creams there, and in a few days cleared out.

INSPECTIONS.

Particulars of regular inspections of slaughter-houses, common lodging-houses, dairies, and cowsheds in the borough will be found in the reports of your Sanitary Inspectors. I have personally visited sixty-one bakehouses, and beyond suggesting in some few instances a little whitewashing, had no comment to make.

Each of your Inspectors has minutely examined a district, or portion of a district, and I must refer you to their reports for particulars thereof.

I have made several general inspections, and superintended the details of the district work.

FACTORY AND WORKSHOP ACT, 1901.

This Act came into force on January 1st, and consequently I have nothing to report concerning it. Its provisions and duties will be fully considered in the current year.

BIRTH RATE.

During 1901 there were 556 births, viz., boys, 274 ; girls, 282. This yields a rate of 16·5 per 1,000. The average for the previous six years is 615, or a rate of 18·4.

The birth rate in England and Wales in 1901 was 28·5

DEATH RATE.

The number of deaths which took place was 504, or a rate of 15 per 1,000 ; while the average for the previous six years is 540, or a rate of 16·1 per 1,000.

The death rate for England and Wales in 1901 was 16·9

UNDER ONE YEAR OF AGE.

The death rate among children under one year of age, estimated at per 1,000 births registered, is 125·3, which is a decided improvement on that for the previous six years, viz., 142·5.

NETT DEATH RATE.

Hitherto in making the nett death rate we have always deducted those occurring among *visitors and strangers*, but the new instructions of the Local Government Board insist on deducting only those deaths of non-residents which take place in hospitals and other institutions for the reception of the sick. Consequently, instead of deducting 58, viz., the total number of strangers who died in 1901, we can only deduct 28, viz., the actual number of non-residents who died in one or other of the various hospitals. In the former case, the nett rate would have been 12·9, while in the latter, or according to the new regulations, it is 14·1 per 1,000.

Year.	Population estimated to Middle of each Year.	Number.	Rate.*	Number.	Rate per 1,000 Births registered.	Number.	Rate.*	Deaths Public Institutions.	Non-Residents Registered in District.	Residents Registered beyond District.	Number.	Rate.*
1	2	3	4	5	6	7	8	9	10	11	12	13
1895.	33100	652	19.6	102	155	583	17.6	41	55		528	15.9
1896.	33200	650	19.5	107	163.7	569	17.1	43	41		528	15.9
1897.	33300	630	18.9	81	127.9	502	15	43	83		419	12.5
1898.	33400	626	18.7	83	131.9	529	15.5	53	70		459	13.7
1899.	33500	573	17	84	143.1	570	17	31	49		529	15.5
1900.	33600	559	16.6	70	124.6	488	14.5	41	58		430	12.8
Averages for Years 1891-1900.	33350	615	18.4	88	142.5	540	16.1	42	59		481	14
1901.	33611	556	16.5	70	125.3	504	15	51	28		476	14.1

* Rates in columns 4, 8, and 13 calculated per 1,000 of estimated population.

NOTE.—The deaths to be included in Column 7 of this table are the whole of those registered during the year as having actually occurred within the district or division. The deaths to be included in Column 12 are the number in Column 7, corrected by the subtraction of the number in Column 10 and the addition of the number in Column 11.

By the term "Non-residents" is meant persons brought into the district on account of sickness or infirmity, and dying in public institutions there; and by the term "Residents" is meant persons who have been taken out of the district on account of sickness or infirmity, and have died in public institutions elsewhere.

The "Public Institutions" to be taken into account for the purposes of these tables are those into which persons are habitually received on account of sickness or infirmity, such as hospitals, workhouses, and lunatic asylums. A list of the institutions in respect of the deaths in which corrections have been made should be given on the back of this table.

The following table gives the details of this mortality:—

MORTALITY IN THE BOROUGH OF TORQUAY DURING 1901.

CAUSES OF DEATH.	DEATHS IN WHOLE DISTRICT AT SUBJOINED AGES.							Non-residents.	Nett result.
	All ages.	under 1	1 and under 5	5 and under 15.	15 & under 25.	25 & under 65.	65 & upwards		
Small-pox									
Measles	29	5	22	1		1			29
Scarlet Fever									
Whooping-cough									
Diphtheria and Membranous croup	1			1					1
Croup	1			1					1
Fever { Typhus									
{ Enteric									
{ Other continued									
Epidemic influenza	7	1				1	5		7
Cholera									
Plague									
Diarrhoea	2	1					1		2
Enteritis	3	2					1		3
Puerperal fever	1					1			1
Erysipelas									
Other septic diseases									
Phthisis	68	2		2	18	42	4	18	50
Other tubercular diseases	11	2	3	2	2	2			11
Cancer, malignant disease	44					27	17		44
Bronchitis	32	8	2			5	17		32
Pneumonia	23	2	2	1	2	9	7	1	22
Pleurisy	1						1		1
Other diseases of respiratory organs	6	1	1			2	2		6
Alcoholism	6					5	1		6
Cirrhosis of liver	1	1							1
Veneral diseases	19	19							19
Premature birth									
Diseases and accidents of parturition	3					3			3
Heart diseases	50	1			2	22	25	1	49
Accidents	10	1	2	1	2	2	2		10
Suicides	5					3	2		5
All other causes	181	24	7	5	4	33	108	8	173
All causes	504	70	39	14	30	158	193	28	476

MEASLES.

We have again endured a visitation from measles, the most intractable and deadly ailment we are called on to deal with. This disease, this matter of course disease, pays us frequent visits, and on each occasion with a terrible fatality. In 1895 there were seventeen deaths: in 1896, fourteen; in 1898, four; and in 1899, eighteen; but the results of this year's epidemic

throws all previous records into the shade, for we have had no less than twenty-nine fatalities. I need hardly say, that if such a mortality had resulted from an epidemic of enteric fever or diphtheria, there would have been a tremendous outcry.

On May 1st I ascertained that there were numerous cases of measles among the children attending Ellacombe Schools, and, what with sickness, and children being sent back who came from infected houses, there were about 130 absent. A supply of circulars, "Measles," was sent, and one given to each child to take home, and an order was issued, duly signed by two members of the Town Council, to close the schools until June 5th.

A supply of circulars was at once sent to the neighbouring schools, and I called on those most in touch with Ellacombe. In the Pimlico three schools I could learn of no cases, but at St. John's, in Braddon Street, three were absent from the Mixed, and nine from the Infants. The teachers were warned to send home any child who seemed ill or stupid, or who belonged to infected homes. I wanted, if possible, to avoid closing the schools, but in vain, for when I called again on May 13th twenty-nine were absent through measles, and I found one case in the class at the time of my visit. The Infant School was then closed for one month. On May 20th I called again, and found half the Mixed School absent, and the teacher told me that but few houses in Braddon Street were free from measles. This school was then closed.

On May 23rd I was at St. James's School, and found that eighty children were away ill, and I then and there sent home three children who were in the early stages of measles. I ascertained that the Whitsuntide holidays would begin the next day, and consequently did not take steps to close the school, but preferred to see what effect these ten days might have on the attendance.

On the 24th I found that the Babbacombe and St. Mary-Church Schools were free from sickness, although at the homes there were a few cases. All the children from infected houses were stopped from attending school.

During the Whitsuntide holidays I made careful enquiries about the children belonging to Ellacombe Schools who were still ill, and also wrote to five of the medical practitioners whose practices lay in that district.

I now learnt that there were twenty-five cases of measles out of sixty-three on the books at the Roman Catholic Schools in Abbey Road, and notice of closure was issued until June 24th.

The Whitsuntide holidays came to an end on June 3rd, and those schools not already closed were re-opened, but I soon found that the short period of this vacation had had no beneficial influence whatever. St. James's School had 180 absent out of 280, and St. John's Mixed School 45 out of 80. These schools were at once closed until July 1st.

On the same day I found that there were suspicious cases in the St. Mary-Church Infant School. Also that at Victoria Park School 32 were absent out of 81 on the books, so this was closed for a month.

On June 6th the mischief had reached Upton Schools, for in the infants' school 43 were absent out of 96, and 24 of these were known to be measles; in the girls' there were 60 absent out of 203, and 42 were on account of measles; while in the boys' school 67 were absent out of 195. These three schools were at once closed for a month.

On the 7th I found that there were 17 cases of measles among the children of St. Mary-Church Infants' School, and I at once recommended the closure for a month. This was the lowest figure up to this date, on which I have advised the closure, and I very much regret that I did not follow this course with the other schools, especially in respect of St. James's School. At the same time instructions were given to the teachers in the St. Mary-Church boys' and girls' schools to exclude children coming from infected houses.

From enquiries I made it was quite clear that there were still numerous cases in Braddon Street, and that it would be folly to attempt resuming work on the 15th (the termination of the closure), so the opening was postponed until July 1st, the date of the re-opening of the mixed school in the same building.

I had by this time received the replies from the five medical practitioners mentioned previously, and the general tenor of the correspondence was that there were still numerous bad cases in the Ellacombe district; consequently the date of re-opening was postponed to June 24th.

On the 11th it became evident that the turn for Torre Schools had come, and the boys' and infants' were closed, but three days later it was found that 47 girls were ill or ailing, so that had also to be shut.

On the 24th the Roman Catholic Schools in Abbey Road was re-opened, and had a fair average attendance; and the same result attended the resumption of work in the three Ellacombe Schools.

On July 1st the Braddon Street Schools were opened, and I could see that there was an average attendance; and the same may be said of St. James's and Victoria Park Schools, which opened on the same day.

On July 3rd I found that in Babbacombe Infant Schools there were 18 known cases of measles, with a total of 29 absentees; 75 names on the books; consequently this was closed.

On the 8th I learnt that there were 13 cases in the Rock Road Schools, out of 60 on the books, and this was at once closed.

This was the last case, and as all the schools were soon shut for the summer holidays, I hoped we had seen the last of it.

During the epidemic I have paid frequent visits to the various schools while open, and impressed on the teachers the necessity for sending home any child who seemed to be having a bad cold, or who had running at the eyes and nose, or with spots on the skin; or even if stupid and unable to attend to the lesson. It was seldom that I visited a school, but I detected and sent home suspicious cases, although I believe the teachers did their best. I also ordered that no child should be admitted who came from an infected house. With each closing order a suggestion was sent that the Sunday Schools should also be closed for the same time. The Superintendents of the Non-conformist Sunday Schools were requested to ascertain as far as possible which children came from infected houses, and to exclude such, and I believe this was done.

The Managers of the schools were requested to fumigate and clean all the school buildings during the closure.

In all there have been twenty-nine deaths, one only being an adult.

Of course, very few were killed by measles direct by the force of its own poison; the majority had some complications, and most often the fatalities were due to chest affection. In the greater number of cases no medical attendance was sought, and in very few is there much necessity, provided simple precautions are taken. But the hard working wife of the labouring man can not sit by the bedside of her child, and see

that it is kept warm. There is the cooking to be done, and the cleaning, and the wash tub to be considered, and thus the little one has the chance of getting out of bed, and running about half naked in draughty passages and on stone floors, and then comes bronchitis, &c., to finish a case which would otherwise have done well. All these fatalities occurred in the homes of working people.

It is, of course, natural that the youngest children should succumb in preference to those who are older and better able to fight against the poison. No less than nineteen of the deaths in this epidemic were under three years of age, and too young to attend school. It is, consequently, clear that the elder children must have been the first infected, and they took the mischief home.

I am quite satisfied that school attendance, with all its subsequent blessings, is certainly answerable for the spread of measles. Children go to school with "a bit of a cold" and give off the germs of the disease when closely packed together, and then it spreads like wild-fire. My action in advising schools to be closed has been adversely criticised, because it was contended that the children gave the infection to each other when playing together in the streets. A curious fact has come to my knowledge during this epidemic. Certain schools have escaped altogether, and quite naturally—for instance, Chelston, Hele, St. Mark's, and St. Matthias—but these schools are widely separated from each other, and from other schools in the borough. But take the case of Pimlico. This building is within three minutes of Braddon Street, about five from Ellacombe Schools, and these distances are not marked by broad gaps, for there is a continuity of houses and intercommunication. The children in Braddon Street are, I feel sure, on terms of intimacy with those of Pimlico, and the same may be said with respect to those of Ellacombe. So that if playing together in the open streets would tend to disseminate the mischief, there ought to have been a spread of the disease into Pimlico School, but there were no cases reported to me during the summer; but strange to say when all the other schools seemed to have been exhausted, the turn of Pimlico came in October and November, and although there were two deaths, it was not found necessary to close the schools, exclusion from infected houses being sufficient.

And now for the lesson to be learned. I am of opinion that we ought to close the schools earlier than we do; in fact, immediately a case of measles is noticed. Now we only close

when there are numerous cases, or "Lock the stable door when the steed is gone." Of course, there would be a great outcry, but better that than twenty-nine deaths. I, for one, should be glad to have an authoritative opinion on this point.

INFLUENZA.

In the spring there were numerous cases of influenza, with seven fatalities.

DIARRHOEA AND ENTERITIS.

Only two deaths from diarrhoea, and three from enteritis. Every effort has been made to strictly limit the use of these terms to the meaning required by the Local Government Board. But even allowing for some unintentional error, so few deaths from these united causes is, I consider, very favourable to the credit of the town, and the purity of the water.

PHTHISIS.

Sixty-eight deaths, with eleven from "other tubercular diseases," is about the average from these causes. As usual, one of the circulars of the "National Association for the Prevention of Consumption and other forms of Tuberculosis" has been sent to the housekeeper where a death has occurred, and an offer to disinfect the room occupied by the deceased. I regret to say that this invitation to disinfect has not always been accepted, the relatives preferring to do it themselves.

CANCER.

No less than forty-four deaths have been assigned to this cause, or nearly one in twelve of the total mortality. This is a very serious matter, and one which the public at large ought well to consider. It is quite possible that such a proportion in Torquay may be due to the fact that large numbers of our inhabitants have done their day's work in other parts of the kingdom, and have come here advanced in life, that is to say, at the cancer age.

BRONCHITIS, PNEUMONIA, AND PLEURISY.

Only fifty-six deaths due to these causes, which is much less than usual, our average being about seventy; and I strongly suspect that many of these were neglected cases of measles.

**CASES OF INFECTIOUS DISEASE NOTIFIED DURING THE
YEAR 1901.**

NOTIFIABLE DISEASE.	At all Ages.	At Ages—Years.					
		Under 1.	1 to 5.	5 to 15.	15 to 25.	25 to 65.	65 and upwards.
Small-pox							
Cholera							
Diphtheria	5		1	2	2		
Membranous croup ..							
Erysipelas	3					3	
Scarlet fever	62		12	36	8	6	
Typhus fever							
Enteric fever	18			13	3	2	
Relapsing fever							
Continued fever							
Puerperal fever	1					1	
Plague							
Totals	89		13	51	13	12	

Fifty-three of these patients were isolated in the Sanatorium, viz., one of diphtheria and fifty-two of scarlatina.

DIPHTHERIA.

In three of the six cases of Diphtheria, serious defects in the conditions of the home were found, in one nothing was detected, and one was doubtful.

ERYSIPELAS.

In all three cases of this disease the sanitary condition of the house was unsatisfactory.

SCARLET FEVER.

Until the re-opening of the Public Schools after the Summer Holidays there had been but very few cases of scarlatina, and of these five were imported; but early in September it became evident that we had to deal with an epidemic, although mild in character, and altogether there were forty-six cases notified; but fortunately there has been no fatality. There were so many cases associated with Ellacombe and St. James's Schools that it was deemed necessary to close them from October 19th to November 17th, with most satisfactory results. At the same time the other schools were warned to exclude all children

living in Ellacombe, Mudge's Hill, Lower Shirburn Road, and Peditford Terrace. Babbacombe was affected somewhat, and so was Hele, but not to such an extent as to necessitate closing the schools.

ENTERIC FEVER.

If I had been asked early in November how many cases of typhoid had been notified during the year, I should have answered, two only, and both in the month of January; one was undoubtedly imported, and the other I was not quite sure about.

On November 24th I learnt of a case of Typhoid in Barton, and the patient, a man of 42, was removed to the Torbay Hospital. I enquired into the history of the case and found that he had been visiting friends in a village outside the borough, where there was a small epidemic; that he had taken food in a house where was a case of typhoid, since dead; and which house was in an unsanitary condition. This was a distinct case of importation, and there was an end of it.

On the 28th of the same month, I received a batch of nine notifications, and four days later another five cases, making fourteen in all.

All these cases were in an orphanage, all of the patients belonged to a distinct division of the establishment, and all partook of a certain supply of scald milk under identically similar circumstances. It was thus easy to eliminate the various risks and chances to which the whole establishment had been exposed. The scald milk was delivered by a farmer living about seven miles from Torquay, who also delivered a supply of raw milk; but none of the consumers of the raw milk were affected. I at once visited the farm, and ascertained that no cream or butter was made there, and the scald milk in question, although supplied by this farmer, was purchased by him from another cow keeper living in the village where was the epidemic of typhoid. I then went to this village and found the house; and as I was approaching, saw the cow keeper come out of the house, and lift a pail of water from the mill pool. The water in the pool did not look inviting; and on tracing up the stream, I saw evidence enough to satisfy me that there were ample opportunities for the water to become polluted. Indeed it was most probable that two cottages, in one of which was a case of typhoid at the time; would get rid of their slops, etc., by throwing them into the stream; it was in fact conveniently handy. There was not the slightest need of the cow keeper using this mill pool water, for he has an excellent spring in his own rights; but it was easier to dip out water from the pool, and thus the mischief came about.

Although some of these cases were very severe, up to this date there has been no fatality. One secondary case only occurred in association with them, and the supply of scald milk having been stopped, these fifteen cases formed the sum total of the trouble.

The lesson to be learnt from this epidemic is very simple, *i.e.*, no amount of care and warnings will protect the community from such a mishap. Here was a plentiful and sound supply of water within easy reach, and yet in a happy go lucky way some is used which was at the time rank poison, simply because it was a trifle nearer.

PUERPERAL FEVER.

Only one case has been notified, and that ended fatally.

I append the seventeenth Annual Report on the Sanatorium, and remain,

Mr. Mayor and Gentlemen,

Your obedient Servant,

PAUL Q. KARKEEK, M.R.C.S. & L.S.A.,

January 21st, 1902.

Medical Officer of Health.

THE MEDICAL OFFICER'S SEVENTEENTH REPORT ON THE SANATORIUM,

For the Year ending 31st March, 1901.

TO THE CHAIRMAN OF THE SANITARY COMMITTEE.

SIR,

At the close of the financial year, 1899-1900, there were five patients under treatment, and from that date to March 28th, 1901, twenty-one fresh cases were admitted, making a total of twenty-six patients who have been inmates of the Sanatorium during the year 1900-1901.

One was a case of diphtheria, two were measles, and the others were Scarlatina. All were discharged cured except those who were still under treatment on March 31st, 1901.

The two cases of measles were sailors from one of H.M.'s Ships, and for whose maintenance the Admiralty paid. Three came from St. Marychurch and were paid for by the District Council; and one was a pauper, for whom the Guardians were answerable.

One was a domestic servant, one was a lady from a villa, two were children from educational establishments, one was a servant in a large hotel, and the remainder came from the homes of the working classes.

The average duration of the patients' stay was forty-seven days, which is somewhat less than last year; viz., fifty-one.

There have been no "Return Cases," showing that it answers to keep in the patients a little longer, than to discharge them too soon.

The cost of working during the twelve months will be seen from the following accounts:—

EXPENDITURE.

			£	s.	d.
Diet of Patients	...	...	91	19	0
Wages and Diet of Nurses	...	...	144	4	6
Laundress	...	...	57	8	0
Curator	...	...	56	9	6
Surveyor's Accounts	...	...	32	14	5
Tradesmen's Accounts	...	...	52	2	3
Rent, Rates and Insurance	...	...	19	0	3
Drugs	...	...	4	12	10
Medical Fees	...	...	11	11	0
Conveyance of Patients	...	...	4	10	0
Coal, Coke and Wood	...	...	30	14	2
Rent of Telephone	...	...	10	10	0
			<u>£515</u>	<u>15</u>	<u>11</u>

RECEIPTS.

Paid by Patients	...	...	...	112	17	0
Deficit	...	...	...	402	18	11
				<u>£515</u>	<u>15</u>	<u>11</u>

These figures should be compared with those of previous years:—

1897	Report	...	58	Patients	...	Cost	609	19	7	...	Deficit	547	0	7
1898	"	...	30	"	...	"	493	13	2	...	"	463	19	2
1899	"	...	35	"	...	"	513	14	11	...	"	496	18	11
1900	"	...	42	"	...	"	564	2	10	...	"	519	8	10
1901	"	...	26	"	...	"	515	15	11	...	"	402	18	11

The average cost per diem of each patient has been 6s. 6½d., which is somewhat higher than usual. This may be partly accounted for by the fact that the cost of nursing was much increased last year, owing to more than one disease being treated at the same time, and each requiring its own nurses. It must also be remembered that the ordinary staff is just as requisite for twenty-six patients, as for forty-two; while the division is much less.

As far as I have been able to learn the patients have been quite satisfied with their treatment while in the building, and I have received no complaint whatever.

Mr. and Mrs. Arnall, and Nurse Hunt have carried out their duties to my satisfaction.

I remain, Sir,

Your obedient Servant,

PAUL Q. KARKEEK,

Medical Officer of Health.

August 20th, 1901.

REPORTS OF SANITARY INSPECTORS.

To the Worshipful the Mayor, Aldermen, and Councillors of the Borough.

MR. MAYOR AND GENTLEMEN,

I have the honour to lay before the Council my Twenty-fourth Annual Report to the Urban Sanitary Authority for Torquay.

As usual, the work of revising defective drainage and sanitary arrangements in all classes of houses, after duly applying the smoke, or, where the drains run under the buildings, the water test, absorbs most of my time and careful attention.

A total of 390 tests were applied, or 70 more than in 1900, 91 being to the drains of new buildings, in sections as they were laid. This work formerly was in the Borough Surveyor's department.

One hundred and forty-five thorough house inspections were made, of which seventy-eight were villas or superior lodging houses, and thirty-six of which paid the fee on being

sold or re-let. Nearly the whole of these houses needed new drainage, or, at any rate, the sanitary arrangements required re-modelling, to bring them up to our present standard. Some of the premises referred to had to be tested three or four times, before being left as in a satisfactory condition.

The chief improvement now effected is the provision of proper inspection chambers at all angles in the drainage systems, and at the intercepting traps; also fresh air inlets, as close as possible to the latter, no fewer than one hundred and fifty-one of these appliances having been provided.

Some twenty-four old masonry drains were discovered and abolished.

The houses inspected were situate in all the Wards of the Borough—a few, in the early part of the year, in St. Mary-Church and Babbacombe, and a considerable number in Chelston, where houses have been lately in much demand.

The drainage and sanitary arrangements of Ellacombe Schools were tested at the request of the Managers; some minor defects were found outside the buildings, and, when remedied, a "satisfactory report" was issued. Also those of the Theatre, and some improved sanitary conveniences were fixed. Owing to pressure of the aforementioned and other work, it was only possible to make a house-to-house inspection of a small set of tenements, viz., Laburnum Court, Torre, which comprises twenty-four cottages or tenancies; several improvements were effected, and a general cleaning up of back yards, etc.

The Common Lodging Houses were visited in due season, and were found to be in improved condition, especially the oldest one, formerly known as "Tucker's," in Pimlico, which is in fresh hands.

The Slaughter House and Marine Stores also were inspected, and clearances of offensive deposits made when notice was given.

I have examined into the condition of those Dairies and Milkshops situate in that portion of the town assigned to me; and also sundry cowsheds in Cockington, outside the Borough, with the Medical Officer. Those in the town were found satisfactory as a whole, but in two notable instances radical alterations had to be carried out to bring them up to the standard.

The number of New Buildings surveyed in 1901 is considerably in excess of that of the previous year, viz., 45, as against 24. Four were in St. Mary-Church and Babbacombe,

sixteen in Chelston, and twenty-five in the old Borough. The chief erection has been the addition of two large wings to the Western Hotel, and the re-arrangement of the drainage system, which in past times gave trouble, especially after heavy rainfall. So far, the new work has answered its purpose.

The office duties, comprising the keeping of the necessary records of all transactions, and the indexing of the same, now embraces the preparation of sketch plans of all new systems of drainage, and of the probable position of old ones, forty-seven of the former having been drawn, and will be valuable for future reference. In addition, three hundred and eighty-two communications, reports, and preliminary notices have been written, and only one legal notice issued, during the year. The vast bulk of the improvements effected in the three hundred and sixty-eight cases were carried out without any difficulty. The owner of the only exception to the rule has seen me last week and given me the necessary orders in the matter, and the work will be proceeded with at once. There have been twenty-four funigations, viz., four after Phthisis, seventeen Scarlet Fever, and three from Diphtheria.

I must seize this opportunity to thank the Council and the Sanitary Committee for sanctioning my application to represent the Borough at the Autumn Conference of the Sanitary Inspectors' Association, which was held last August in London and Southend-on-Sea.

I was desired to furnish a report on the proceedings, and in due course it was prepared and presented.

I am, Gentlemen,

Yours obediently,

CHARLES MACMAHON,

*Cert. San. Inst. ; M.B.I. Pub. Health ;
Inspector of Nuisances and Surveyor of New Buildings.*

*To His Worship the Mayor, Aldermen and Councillors
of the Borough.*

GENTLEMEN,

I beg to submit to you my Fourth Annual Report for the year ending December 31st, 1901.

Owing to the stress of other work only a very small portion of the house to house inspection has been carried out, namely

the portion of Pimlico remaining over from last year. Nineteen tenement and other houses and premises, with a population of seventy-nine, have been inspected.

In connection with this work eleven notices have been served to abate the various nuisances found on such inspection. Eight of these notices were preliminary and three legal.

One hundred and eight houses and premises have been visited and inspected upon complaint or by request, and forty-five smoke and hydraulic tests applied to drains, and seventy-nine notices served to abate nuisances found; ten of these notices were legal.

Three hundred and fifty-one visits of inspection have been made to premises where work was in progress, and also one hundred and ninety-eight smoke and ninety-eight hydraulic tests applied to drains after alterations to same.

In connection with the new sewerage work in St. Mary-church and Babbacombe at the beginning of the year, the drainage connections from eighty-two houses and premises to the main sewers in the following roads were tested :—

Torquay Road	St. Albans Road
Cambridge Road	York Road
St. Margarets Road	York Terrace
All Saints Road	Warberry Lane
Portland Road	Fore Street
Westhill Road	Compton Place

Also forty houses and premises in Barton, Coombe Pafford, and Pavor have been drained and connected to the new sewer; the privies converted into water closets and a supply of water laid on from the main.

In each instance the drainage was tested on completion. Twenty-six notices, two of which were legal, have been served in connection with this work.

Also two cottages were closed as unfit for human habitation.

Nine houses and premises have been examined and reported upon, and the drainage tested for Sanitary Certificates on payment of the 10s. fee, and upon completion of the necessary work the Certificates have been granted.

In one instance at some large Church Schools the whole of the drainage was reconstructed.

Since August the drainage of ten new houses and premises have been tested, and the houses examined prior to occupation, and most of them were found satisfactory.

Considerable trouble from overcrowding has been caused by the French onion hawkers during the months of September, October and November, and on three occasions I paid midnight visits to the premises occupied by them and in four instances it was found necessary to serve notices.

I have, during the month of July, and again in October, inspected thirty-nine Milkshops, Dairies and Cowsheds in various parts of, the Borough, and in most instances they were found in a satisfactory condition.

Also during the months of November and December the Dairies and Cowsheds on twenty-seven farms outside the Borough (and from which milk is sent into the Borough) have been visited and inspected with the Medical Officer.

Twenty-four rooms have been disinfected where 20 Scarlet Fever, 1 Typhoid Fever and 2 Erysipelas cases occurred; also 14 rooms have been disinfected after death from Consumption; and also a quantity of clothes worn by a person who had been in contact with a case of Small-pox (outside the Borough)—a total of thirty-five disinfections.

In connection with this work four houses have been examined and the drainage tested, and four notices have been served to remedy the defects found.

The basement rooms at four premises illegally occupied as cellar dwellings have been closed, and legal notices were served in connection with the same upon the owners in three instances.

The total number of notices served during the year was one hundred and twenty-eight, and of these twenty-three were legal.

The Market has been frequently visited during the year and found in a satisfactory condition.

I beg to take this opportunity of thanking the Council for appointing me a delegate to the "Royal Institute of Public Health" Congress, held at Eastbourne in July last. A full report on the proceedings and papers read will be found in my report handed in to the Sanitary Committee on my return.

I am, Mr. Mayor and Gentlemen,

Yours obediently,

WILLIAM B. WATSON,

Cert. San. Inst.; Sanitary Inspector,

Inspector of New Buildings, and Dairies, Cowsheds, and Milkshops.

*To His Worship the Mayor, Aldermen, and Councillors
of the Borough of Torquay.*

GENTLEMEN,

I have the honour to present to you my first Annual Report for that portion of the Borough allotted to me, which includes St. Mary-Church, Babbacombe, Hele, Plainmoor, Wellswood, and Ilsham, for the year ending December 31st, 1901.

Twenty premises were disinfected in consequence of infectious diseases, viz., sixteen scarlatina, two diphtheria, one erysipelas, and one typhoid. In nine instances the drains were tested, and six were repaired.

The drains of eighteen premises were tested by request. Fifteen were found defective, fourteen were relaid or repaired, and eleven sanitary certificates were granted.

Forty-one premises were visited on complaint. In twenty-three cases the drains were smoke-tested. Repairs were executed in twenty-one instances.

At Barton eleven premises have been connected with the new sewer.

House-to-house inspection has been carried out in different parts of the district, as follows:—

COMPTON PLACE. Twenty-five houses were inspected. Fifteen drains proved defective on applying the smoke test, and were relaid or thoroughly repaired. Seventeen flush cisterns were fixed where required.

WOODLAND TERRACE, Teignmouth Road. Seven houses were inspected, and smoke tests applied to house drains. Five were found defective, and were afterwards relaid; and six water-closets, which were without any flushing apparatus, were subsequently provided with flush cisterns.

PORTLAND PLACE. Five houses were inspected, and drains smoke tested and completely overhauled.

VICTORIA PARK, GRAFTON TERRACE, AND TRAFALGAR TERRACE. Thirty-nine premises were inspected, and the drains thereof tested. Up to the present time ten have been relaid or repaired.

PARK PLACE, Teignmouth Road. The drains of fifteen premises were tested, and in seven instances they were thoroughly put in order.

MYRTLE COTTAGES, Plainmoor. Ten premises were inspected, and tests applied to house drains. Three of these have been thoroughly repaired, and the remaining seven are in hand.

BAKEHOUSES. In company with the Medical Officer of Health, inspection was made of eighteen bakehouses in the district.

PUBLIC WELLS. Samples of water were taken from nine public wells.

NEW BUILDINGS. Nine were inspected, and the drains tested during the progress of the work. Three were situate at Barton, four in St. Mary-Church, and two at Babbacombe.

THE DAIRIES, COWSHEDS, AND MILKSHOPS in the district have been inspected at intervals, and the same were found in a clean condition; in fact, some will compare very favourably with those of any district. In two cases improvements were made in regard to paving and drainage.

In company with the Medical Officer of Health, visits of inspection were paid to twenty farms situated outside the Borough, and which were supplying milk to dealers in the town. The districts visited were Dacombe, Coffinswell, Shiphay, Edginswell, and Stokeinteignhead.

THE SLAUGHTER-HOUSES in the district have been periodically visited, and in one instance, where a cesspit was in use, a new drain was laid to the sewer and the cesspit abolished.

Twelve nuisances, arising from the keeping of animals on premises, were abated.

I am, Mr. Mayor and Gentlemen,

Yours obediently,

H. RUSSELL SMITH,

Cert. San. Inst.; Sanitary Inspector.

REPORTS OF SCHOOL ATTENDANCE OFFICERS.

*To the School Attendance Committee of the Borough
of Torquay.*

GENTLEMEN,

I respectfully submit for your information the usual report of school attendance, in that part of the Borough for which I am your attendance officer, during the year 1901.

Ilsham and Victoria Park Schools having been transferred to school attendance officer Hugo's district, I have deducted the number on books and in average attendance at the schools named during the year 1900.

The head teachers' returns shew the following results, viz:

	Average number on Books.			In Average Attendance.			Percentage on Average Attendance.	
Year 1900	2943	...		2484.2	...		84.3	
„ 1901	2953	...		2497.2	...		84.5	
Increase	10		Increase	13.0		Increase	.2	

The returns for 1901 shew there were on the books 940 Boys, 909 Girls, and 1,104 Infants; and in average attendance 827.1 Boys, 781.6 Girls, and 898.5 Infants. The percentage on average attendance was Boys 87.9, Girls 85.9 and Infants 81.3. 396 Infants were under five years of age.

The past year has been most unfortunate as regards school attendance, all the schools except two in my district were closed in the summer through an epidemic of measles, and two of them again closed in the autumn through an outbreak of scarlet fever.

During the year 1901 the School Attendance Committee held 11 meetings and dealt with 338 cases of irregular attendances; 157 warning letters were sent to parents; 3 notices of illegal employment served, and 54 summonses ordered; 3,955 visits were made by your attendance officer to parents of children who were reported absent from school.

The prosecutions taken resulted in two fines of 15/-, one of 10/-, nineteen of 5/-, two of 4/-, three of 3/6, and four of 2/6 each, total, £8 3s. 6d. One boy was committed to the truant school; one to the Mount Edgecumbe Training Ship, one to the Devon and Exeter Industrial School, and two cases were dismissed.

Your obedient Servant

G. R. S.

dated January 15th, 1902.

School

PROSECUTIONS, &c. DURING

During the year 157 warnings and 3 notices were issued and proceedings taken in 54 cases, as follows, viz. :—

	No. of Cases.	Fined.	Dismissed.	Withdrawn	Costs Trusted School
Under Bye-laws ..	25	23	2	—	—
Attendance Orders granted ..	17	—	—	—	—
Non-compliance with Attendance Orders ..	12	9	—	—	1

[illegible]

*To the School Attendance Committee of the Borough
of Torquay.*

GENTLEMEN,

In presenting to you this my second Annual Report with respect to the Babbacombe, Ilsham, and Victoria Park Schools, I beg to state that the returns show that there are 122 boys, 133 girls, and 184 infants (104 over 5 and 80 under 5) on the school registers; total, 439.

Average attendance—Boys, 115·9; girls, 119·5; infants over 5, 87·9; under 5, 62·7; elder children, 235·4; infants, 150·6. Percentage—Boys, 93·6; girls, 89·2; infants over 5, 81·0; under 5, 77·8; elder children, 91·4; infants, 79·4.

There has been much sickness among the children. Two of the infants' schools were closed for four weeks by order of the Medical Officer.

During the year 111 warnings to parents and three notices to employers have been served.

Sixty-two cases for investigation have been brought before you, and 12 summonses have been applied for. The fines were one 6s.; seven of 5s. each. Two attendance orders were granted, and two cases dismissed. All the fines were paid.

There is one child, Beatrice Cumming, who is now in the Blind Institution at Exeter.

I am, Gentlemen,

Your obedient Servant,

A. HUGO,

School Attendance Officer.

METEOROLOGICAL REPORT.

*to the Worshipful the Mayor, Aldermen and Councillors of
the Borough of Torquay.*

GENTLEMEN,

I have the honour to submit the Annual Report of the Meteorological Observations taken at the Borough Stations at Cary Green, Princess Pier, and Chapel Hill during the year 1901.

In accordance with the instructions of the Sanitary Committee, the Thermometers and Rain Gauge were removed from Chapel Hill in January to the new enclosure in the Princess Gardens, but the official readings continue to be taken at Cary Green as heretofore. The Anemometer and two Sunshine recorders are still on Chapel Hill, and the official record of bright sunshine is taken from the old Campbell-Stokes instrument there fixed. The Curtis' Improved Campbell-Stokes recorder, placed experimentally on the Pier, has given excellent results, and will shortly be permanently fixed, together with the Jordan Photographic instrument, on or near the new Pavilion, in order that the Chapel Hill Station may be abandoned.

Readings have been taken at these stations daily throughout the year, in accordance with the instructions of the Royal Meteorological Society.

Mr. Marriott, the Assistant-Secretary of the R.M. Society, again visited the stations in August, and approved the methods of observation adopted.

The usual monthly returns have been made to the R.M. Society, the Directors of the British Rainfall Organization, the Torquay Natural History Society, the "Western Morning News," the "Western Daily Mercury," and the local papers, and have been posted in the town.

A weekly report of bright sunshine has been sent to the Meteorological Office, for publication in the Official Return. A copy of this Return is received weekly, and gives data for the comparison of our own sunshine, rainfall, and temperatures with those of other stations. A full climatological report has been published weekly in the "Torquay Directory" and the "Devon and Exeter Express," and notes of exceptional weather

have been furnished to the local papers from time to time. Many letters of enquiry as to our climate have been received and answered during the year, and a great deal of interest in the observations and results has been displayed, both by resident and visitors.

Daily returns have been posted at the usual stations and at the office in the Princess Gardens, and have been furnished to the Natural History Society. A telegraphic report of the day's weather has been sent each evening (with the obvious exception of Saturdays) to papers as under:—London "Standard," London "Daily Chronicle," London "Morning Leader" (part of year only), "Western Morning News," "Manchester Guardian," "Leeds Mercury," "Yorkshire Daily Observer" (Bradford and district), "Liverpool Post," "Liverpool Journal of Commerce," "North British Daily Mail" (part of year only), "Sheffield Telegraph," "Birmingham Daily Post" (summer only), "Newcastle Chronicle," and "Bristol Mercury." In consequence of change of proprietorship, the "North British Daily Mail" no longer accepts weather telegrams, but I have just succeeded in adding the London "Daily Telegraph" to this list.

In addition to these telegrams, by arrangement with the Great Western Railway, similar reports are sent daily by post to twenty-two stations and receiving offices in London, Birmingham, Oxford, Shrewsbury, Worcester, Cardiff, Chester, Pontypool Road, Wolverhampton, Crewe, Birkenhead, Liverpool, and Manchester and are there placed in a special frame, headed with a view of Torquay, for public exhibition. By these means the British public over a wide area is kept informed of the exceptionally favourable climatological conditions enjoyed by us.

I have to acknowledge assistance, courteously rendered at various times, by Mr. Councillor Taylor and Mr. Bourne.

I am, Gentlemen,

Your obedient servant,

FREDERICK MARCH.

THE INSTRUMENTS.

The following are the instruments and appliances in regular use, those marked with an asterisk being the property of the Torquay Natural History Society, and by them lent to the town :—

* **The Barometer** is a Fortin Standard and is read twice daily, at 9 a.m. (local time) and at about 5 p.m. All readings are reduced to 32° F. and mean sea level, and are thus comparable with all readings similarly reduced.

* **An Aneroidograph**, by Richard Freres, gives in graphic manner the alternations of pressure.

There are two double louvered **Stevenson's Screens**, each containing **Dry and Wet Bulb**, and **Maximum and Minimum Thermometers**. The instruments are of Casella's make, and are so placed that the bulbs of the hygrometer are 4 feet above the level of the grass. One of these sets has been working throughout the year at Cary Green, where the official temperatures for the Meteorological Office and Royal Meteorological Society have been taken, the other in the Princess Gardens.

A third * **Stevenson's Screen**, also double louvered, has been in position in the Princess Gardens, and has held a * **Thermograph** or Self-recording Thermometer and an **Ozonometer**. The ozone Test Papers and Scale used are Moffat's, and the principle on which the instrument works is the liberation of iodine by the action of ozone upon iodide of potassium contained in the paper,

and the action of this free iodine upon starch, in solution of which the paper has also been soaked. This is only a rough test, but it is the same for all stations, and is approximately correct.

* **Solar Radiation Thermometers**, black bulb in vacuo and bright bulb in vacuo, are contained in a stand of their own, which has been placed in the Princess Gardens.

The **Grass Minimum** is by Hicks, and is placed on grass in the Princess Gardens about an inch above the ground. The readings have been far more satisfactory since its removal to this site.

The **Rain Gauges** are of copper, by Casella, and of Snowdon pattern. They are placed, one on Cary Green, one in the Princess Gardens, with the upper edge 12 inches above the level of the ground.

The **Sunshine Recorders** have been placed—two upon the roof of the office at Chapel Hill, 286 feet above mean sea level, and one, a Campbell-Stokes instrument, experimentally on structures at the end of the Princess Pier.

They are—

(1.) A Campbell-Stokes instrument, fitted with a $3\frac{1}{2}$ inch spherical lens of crown glass, and working on the principle of the burning-glass.

(2.) A Curtis' Improved Campbell-Stokes Recorder.

(3.) A Twin Jordan Photographic Recorder, which works by the differentiation in colour effected by bright sunlight on specially prepared chemical paper.

The **Anemometer**, for registering the horizontal velocity and direction of the wind, is a Robinson self-recording embossing instrument by Casella. The cups are of 5-in. diameter, and are fixed on 12-inch arms at Chapel Hill.

THE OBSERVATORY.

The Chapel Hill Observatory is built on limestone rock at the summit of the quarry, and at the back or N. side of the old ruined Chapel; about $\frac{1}{4}$ mile from the sea, overlooking Torbay and the English Channel. The ground level is 276 ft., and the top of the building 286 ft. above mean sea level. The part of the building immediately under the Sunshine Instruments is built of solid limestone to prevent vibration.

The latitude is $50^{\circ}29'$ N., and the longitude $3^{\circ}32'$ W. = to 14 minutes after Greenwich Mean Time.

The Cary Green and Princess Pier Readings are taken 12 feet above mean sea level.

The Observatory is organised and maintained by the Town Council, and is under the supervision of the Royal Meteorological Society.

The several Barometers, Thermometers, and Rain Gauges have been verified at Kew Observatory, and regularly examined by a representative from the Royal Met. Society. Readings are all corrected for instrumental errors.

The Hygrometrical Results are deduced from the daily morning readings of the Dry and Wet Bulb Thermometers by means of Glaisher's Tables.

The averages for Sunshine are the result of 13 years', for Temperature and Rainfall of 25 years', and for Pressure of 17 years' observations.

DURATION OF BRIGHT SUNSHINE

In hours and tenths of an hour,

As recorded by the Campbell-Stokes' Standard Instrument.

1901.	Total Bright Sunshine.	Percentage Actual of Possible.	Difference from Average.	Greatest Amount in one day.	Date.	Percentage Actual of Possible.
January ...	82·8	31·8	+ 20·4	7·4	5th	84
February ...	92·7	33·6	+ 12·7	8·3	21st	81
March	122·7	33·7	- 22·0	10·2	26th	84
April	231·6	56·5	+ 53·5	13·1	24th	92
May	284·1	59·8	+ 58·3	14·1	15th	91
June.....	209·6	43·1	- 28·7	14·0	26th	85
July	239·4	49·2	- 56·3	14·2	18th	88
August.....	233·3	52·7	+ 26·8	13·5	2nd	89
September..	129·2	34·6	- 37·2	10·7	5th	82
October ...	122·0	37·3	+ 6·1	9·0	2nd	77
November..	66·0	25·0	+ 3·5	7·9	17th	91
December ..	63·1	26·2	+ 9·8	5·9	27th	75
Year...	1876·5	42·6	+ 46·9	14·2	July 18th	88

For Jordan Readings see p. 48.

REMARKS.

The total amount of bright sunshine recorded by the Campbell-Stokes' instrument is 20·5 hours below that of 1900, and 162·4 below that of 1899, but is still 46·9 hours above the average of 13 years. The summer sunshine—April to September inclusive—amounted to 1,327·2 hours, shewing an average per day of 7·3 hours; and the winter sunshine—October to March inclusive—amounted to 549·3 hours, shewing an average per day of 3 hours. The mean amount per day for the year is 5·1 hours.

- Eight of the 12 months, including all the winter months but March, exceeded their respective monthly average.

Over 14 hours' (14·2) sunshine was recorded on July 18th, and this was the sunniest day of the year, though on several days, as the tables show, a higher percentage was recorded, the highest being 92% of the possible on April 24th.

The number of sunless days was 49, a proportion of 2 in 15, and these were very evenly distributed over the year. January and February were particularly bright winter months, with only 6 and 4 sunless days respectively. There was sunshine on every day in May.

BAROMETRIC PRESSURE

In inches and thousandths.

Reduced to 32° F. and Sea Level.

1901.	Mean of Month.	Difference from Mean of Month.	Highest Reading.	Lowest Reading.	Extreme
January	30·057	+0·017	30·591	29·570	1·
February	30·112	+0·112	30·601	29·377	1·
March	29·799	-0·173	30·548	29·089	1·
April	29·862	-0·012	30·321	29·378	0·
May	30·113	+0·148	30·475	29·378	1·
June..	30·085	+0·074	30·441	29·732	0·
July	30·017	+0·030	30·327	29·554	0·
August.....	30·103	+0·138	30·396	29·615	0·
September	29·886	-0·135	30·294	29·358	0·
October	29·927	-0·038	30·284	29·238	1·
November	30·207	+0·275	30·618	29·166	1·
December	29·708	+0·290	30·429	28·973	1·
Year.....	29·990	+0·012	30·618	28·973	1·

REMARKS.

The mean barometric reading for the year was 29·990, being 0·038 above the mean of 1900, and 0·012 above the mean of 17 years.

The highest reading—30·618—was taken on November 25th, and the lowest—28·973—on December 25th, shewing an extreme range of pressure of 1·645 inches.

The greatest variations occurred in March, December, and November, and the least, as would be expected, in June, July, and August.

The highest monthly readings were taken in November, with a mean of 30·207, and the lowest in December, with a mean of 29·708.

RAINFALL

In inches and hundredths.

1901.		Total Amount.	Difference from Average.	Wet Days.	Mean Wet Day Rainfall.	(greatest fall in 24 hours.	
January ...	*C. G.	3·34	+0·05	19	0·18	0·81	
"	†P. G.	3·30		20	0·17	0·74	
February ...	C. G.	1·23	-1·56	9	0·14	0·50	
"	P. G.	1·23		9	0·14	0·50	
March	C. G.	4·75	+2·30	20	0·24	2·31	
"	P. G.	4·44		20	0·22	2·10	
April	C. G.	4·58	+2·24	17	0·27	0·98	
"	P. G.	4·63		17	0·27	0·99	
May	C. G.	1·43	-0·58	8	0·18	0·69	
"	P. G.	1·44		8	0·18	0·68	
June.....	C. G.	1·01	-1·21	8	0·13	0·33	
"	P. G.	1·01		8	0·13	0·33	
July	C. G.	1·84	-0·54	7	0·26	0·62	
"	P. G.	1·90		7	0·27	0·73	
August.....	C. G.	0·89	-1·83	10	0·09	0·50	
"	P. G.	0·89		10	0·09	0·50	
September	C. G.	4·42	+2·12	15	0·29	1·62	
"	P. G.	4·50		15	0·30	1·66	
October ...	C. G.	1·50	-2·55	15	0·10	0·43	
"	P. G.	1·52		15	0·10	0·41	
November	C. G.	0·53	-3·37	6	0·09	0·16	
"	P. G.	0·53		6	0·09	0·16	
December	C. G.	7·30	+3·54	19	0·38	1·24	
"	P. G.	7·10		19	0·37	1·24	
Year.....	C. G.	32·82	-1·39	155	0·19	2·31	N
"	P. G.	32·49		156	0·19	2·10	N

* Cary Green.

† Princess Gardens.

REMARKS.

The total rainfall, including snow, hail, sleet and condensed mist, amounted to 32·82 inches at Cary Green, which was 0·27 below that of 1900, and 1·39 below the average of 25 years. Of this amount 10·64 inches fell in December and January, when other parts of the country were more or less covered with snow. The rainfall of seven months was *below*, and that of *five* months above the average. The months of May, June, and July were abnormally dry with a deficiency of 35 per cent on the average rainfall, and November was a remarkable month in this respect, with a rainfall of 0·53 or only 13 per cent of the normal fall. Indeed, at the end of this month the rainfall was about five inches below the mean, and had it not been for the heavy downfalls of December, when over 3½ inches fell in three days, the year would have been an abnormally dry one.

In comparing our average rainfall with that of other towns, notice should be taken of the fact that it is comparatively higher in some instances, because of the long period during which observations have been taken in Torquay. For instance, the mean used in these comparisons is 34·21 inches, whereas if our observations had commenced in 1895, it would have been 31·96 inches, or *two and a quarter* inches lower. Due regard should also be had to the fact that an unusually large proportion of our rain falls at night and in the early morning. We have as yet no means of proving this statement, but it is common knowledge to those who live in the neighbourhood. The heaviest rainfall the writer has been able to trace on our records occurred on March 20th and totalled 2·31 inches. On the same day 2·10 inches were measured at Princess Pier, and Mr. Ernest Smith, of Livermead House, recorded 2·53 inches.

SHADE TEMPERATURES.

Taken at 9 a.m. (Local Time).

1901.		Max. & Min. mean.	Difference from Average.	Maximum mean.	Minimum mean.	Range mean.	Highest.	Date.	Lowest.	Date.
		°	°	°	°	°	°		°	
Jan. ...	*C.G.	42·3	+0·3	46·7	37·9	8·8	53·5	21st	22·5	9th
Feb. ...	C.G.	39·0	-4·3	44·0	33·9	10·1	52·7	28th	25·5	15th
March.	C.G.	40·8	-3·1	46·7	36·8	9·9	54·3	12th	25·5	28th
April ..	C.G.	48·3	+0·1	54·8	42·0	12·5	65·2	24th	35·1	1st
May ...	C.G.	53·7	+0·6	60·2	47·2	13·0	66·2	14th	40·0	8th
June...	C.G.	57·2	-1·8	62·6	51·7	10·9	68·5	6th	44·2	13th
July ...	C.G.	64·3	+2·7	71·4	57·2	14·2	78·6	10th	50·3	16th
Aug....	C.G.	62·4	+0·8	69·4	55·3	14·1	77·6	19th	47·4	28th
Sept. ...	C.G.	59·7	+1·5	64·7	54·6	10·1	68·1	29th	49·0	26th
Oct. ...	C.G.	53·8	+2·1	59·4	48·2	11·2	65·9	2nd	40·5	27th
Nov....	C.G.	45·7	-1·7	50·5	40·8	9·7	58·4	20th	29·3	16th
Dec. ...	C.G.	43·0	-0·1	48·4	38·2	10·2	55·7	7th	27·8	20th
Year	C.G.	50·8	-0·3	56·5	45·3	11·2	78·6	July 10th	22·5	Jan. 9th

* Cary Green.

REMARKS.

The mean temperature of the air for the year was $50^{\circ}8$, being $0^{\circ}7$ below that of 1900, and $0^{\circ}3$ below the average of 26 years. The mean temperature for the winter months—October to March inclusive—was $44^{\circ}1$, and of the summer months—April to September inclusive— $57^{\circ}6$. The mean maximum temperature for the winter months was $49^{\circ}3$, and for the summer $63^{\circ}8$; the mean winter minimum $39^{\circ}3$, and mean summer minimum $51^{\circ}3$.

Stress was laid last year in this report upon the fact that our summers are cool. Further evidence of this is afforded by these tables. It will be seen that our mean maximum temperature for the months of June, July, and August was only $67^{\circ}8$, and our mean temperature $61^{\circ}3$, and that the actual highest reading—on July 10th—was only $78^{\circ}6$. Many visitors to Torquay have expressed to the present writer their surprise upon finding it so much cooler than their own homes, and he trusts that in time accumulation of evidence, such as these reports furnish, will extinguish the impression, fostered often by interested parties, that Torquay is “frightfully hot in the summer.”

As to our winter climate, a perusal of the following figures, taken *without selection* from the “Meteorological Record” for the quarter ending March 31st, 1901, and published officially by the Royal Meteorological Society, will shew the proud position we occupy among our sister watering places. In each of the three months we had the highest mean temperature, and if stations less favoured by Nature were taken the comparison would be still more to our advantage.

	JANUARY.			FEBRUARY.			MARCH.		
	Max.	Min.	Mean.	Max.	Min.	Mean.	Max.	Min.	Mean.
TORQUAY ..	46.8	37.9	42.4	44.1	33.9	39.0	46.7	36.8	41.7
Tunbridge Wells ..	42.6	32.0	37.3	39.3	29.3	34.3	43.3	33.3	38.3
Margate ..	43.8	34.9	39.4	40.1	31.6	35.8	43.8	36.0	39.9
Eastbourne ..	44.6	37.0	40.8	41.0	32.7	36.9	44.9	37.0	40.9
Brighton ..	45.3	36.0	40.7	41.7	32.8	37.2	46.2	36.3	41.3
Bournemouth ..	45.3	35.1	40.2	41.9	32.3	37.1	45.9	35.2	40.6
Weymouth ..	45.9	37.8	41.9	42.3	33.6	37.9	45.5	36.4	41.0
Ventnor ..	46.6	38.4	42.5	42.7	33.9	38.2	45.6	36.4	41.0
Bath ..	44.4	33.3	38.9	42.3	31.5	36.9	46.8	34.3	40.5

SOLAR AND TERRESTRIAL RADIATION

ON GRASS.

1901.	Solar Max. Mean	Highest.	Date.	Max. Solar Radiation.	Minimum mean.	Lowest.	Date.	Number of Days at 32° and below.	Mean Night period Vari- ation of
Jan. ...	68·4	89·4	31st	21·7	35·8	—	—	17	—
Feb. ...	79·8	107·4	28th	35·8	31·8	21·3	15th	18	—
March..	83·6	105·8	4th	36·9	34·7	21·7	29th	7	—
April ..	99·7	109·0	24th	45·2	37·0	29·8	17th	3	—
May ...	98·5	110·0	31st	38·3	42·9	36·1	8th	0	—
June...	103·7	114·1	3rd	41·1	47·4	36·8	14th	0	—
July ...	105·2	116·7	5th	45·3	54·0	48·9	27th	0	—
Aug. ...	110·0	121·1	8th	40·6	51·6	43·5	28th	0	—
Sept ..	102·2	117·7	21st	37·5	50·4	43·4	26th	0	—
Oct. ...	98·1	114·4	3rd	38·7	43·3	34·2	23rd	0	—
Nov....	75·2	89·9	22nd	24·7	35·9	22·6	15th	10	—
Dec. ...	68·3	86·5	29th	19·9	31·2	20·0	21st	17	—
Year	91·1	121·1	Aug. 8th	45·3	41·3	20·0	Dec. 21st	72	—

REMARKS.

The mean maximum solar temperature is taken with a sensitive maximum thermometer, which has the bulb and about an inch of the stem coated with dull lamp-black. The thermometer is enclosed in a vacuum tube and mounted four feet above the ground. The measure of solar radiation is found by subtracting the maximum reading of this instrument from the maximum of a shade thermometer, but the observation is not of much value.

The mean minimum grass temperature is taken with a highly sensitive spirit minimum thermometer, placed horizontally on short grass. The instrument was moved in January from Chapel Hill to the new station, and so the record is imperfect for purposes of comparison, but it is interesting to notice that the suspicion cast upon the Chapel Hill site for this Thermometer in the last report is sufficiently justified. The mean daily variation—the measure of terrestrial radiation—in 1901 was not less than $4^{\circ}1$; in 1900 it was only $2^{\circ}9$.

The highest solar temperature (black bulb) registered was $121^{\circ}1$ on August 8th. Solar temperatures are not generally taken or published, but this may be compared with a reading of 140° taken at Bisley during the Rifle Shooting Competition, whether with black or bright bulb was not stated. This furnishes incidentally another proof of the comparative coolness of our summer climate.

HUMIDITY, CLOUD, OZONE, AND WIND

1901.	HUMIDITY.			CLOUD	OZONE.			WIND.	
	Dry Bulb <i>mean.</i>	Wet Bulb <i>mean.</i>	Relative Humidity.	Cloud <i>mean</i> 1 to 10.	Mean Daily Amount.	Greatest Daily Amount	Least Daily Amount.	Total Horizontal Motion.	Prev. Quar.
	°	°	%		%	%	%	Miles	
January	42.2	40.4	86	7	49	90	5	9181	N.W.
February	38.5	36.4	82	7	28	75	5	4390	N.N. &
March ...	42.4	39.6	78	7	50	75	10	6054	E. & W
April ...	50.2	46.5	73	5	60	80	40	7914	W. & E
May	55.0	50.2	70	5	55	80	35	5746	E.
June.....	59.5	54.7	72	7	51	90	20	5430	E. N.W
July	65.6	60.6	73	4	41	70	20	3475	S.W.
August...	63.7	59.0	73	6	46	65	20	5562	W., N.W
Sept. ...	60.0	56.9	81	7	46	70	20	5026	S. & E.
October	53.9	51.0	82	8	45	90	10	6449	N., N.W
Nov.....	44.6	42.3	83	7	32	70	10	7146	N. & W
Dec.....	43.1	41.0	84	6	50	80	10	11446	W. & N
Year...	51.6	48.2	78	6.3	46	90	5	77819	

REMARKS.

The mean Dry Bulb Reading for the year—giving the temperature of the air day by day at 9 a.m.—was $51^{\circ}6$; the mean Wet Bulb Reading—giving the temperature after complete saturation has been effected—was $48^{\circ}2$. The difference shews a mean Humidity of 78%, the same as in 1900, and 4% below the average.

The following table, reprinted from the last report, will shew that Torquay is not so humid as is generally supposed :—

	Mean Humidity at 9 a.m.		Mean Humidity at 9 a.m.
TORQUAY	... 78%	Ilfracombe	... 83%
Southport	... 81	Brighton	... 79
Morecombe	... 84	Eastbourne	... 80
Harrogate	... 78	Weymouth	... 78
Llandudno	... 76	Newquay	... 84
Burton ...	... 80	Manchester	... 79
Lowestoft	... 87	London	... 76
Margate ...	... 82		

The total mileage of wind for the year, as recorded by the Robinson's Anemometer, was 77,819 miles, which compares with 79,608 miles in 1900.

DURATION OF BRIGHT SUNSHINE

In hours and tenths of an hour,

As recorded by the Jordan Photographic Twin Instrument.

1901.	Total Bright Sunshine.	Difference from Camp- bell-Stokes' Record.	Greatest Amount in one day.	Date.	Percentage Actual of Possible	Sunless
January ...	71·5	— 11·3	6·4	5th	73	
February ...	81·5	— 11·2	7·5	21st	73	
March	119·0	— 3·7	9·5	26th	79	
April	230·1	— 1·5	12·8	24th	90	
May	267·9	— 16·2	13·8	14th	89	
June.....	196·1	— 13·5	13·8	26th	84	
July	231·9	— 7·5	14·2	16th	88	
August.....	223·1	— 10·2	12·9	2nd	85	
September..	124·9	— 4·3	10·7	5th	82	
October ...	117·3	— 4·7	8·8	2nd	75	
November ..	57·3	— 8·7	6·8	16th	78	
December ..	59·8	— 3·3	5·6	19th, 27th	71	1
Year...	1780·4	— 96·1	14·2	July 16th	88·0	5

The figures given in these and the preceding tables will show how fully justified was the article by Mr. Julian Ralph, which appeared in the "Daily Mail," of February 20th, 1901, from which the following extracts are taken :—

A SEARCH FOR SUNSHINE.

FOUND AT TORQUAY.

"Better go and get a little sunshine," said my doctor.

"Sunshine," I murmured to myself; "sunshine!" I kept repeating it in my surprise and, without thinking, I said it aloud as I went into the chemist's to have a tonic put up.

"Sunshine!" he repeated. "No, sir; we're out of it."

Presently I was in a cab on the way to Paddington to get the 1.15 Western express, which is said to chase the sun every afternoon so as to catch it before it falls into the sea. It was a normal London noontime. Kensington Gardens and Hyde Park formed a big steam bath with their trees sticking up in it and it running out through the open iron fence into the streets. In the streets the air was wet and dirty, as if the clouds had fallen down from the sky and had been rolling around in the mud. All the windows in the houses were brilliantly lighted, as if it was bedtime, and you could see the people indoors moving about in a haze like fishes swimming around and pulling streaks of milky water after them, for the fog had crept into the houses to warm itself at the grates and the gas jets.

"Oh, the sun!" exclaimed the guard. "You'd better get a ticket for Torquay. You'll find the sun there; it's been spending its winters there for years."

"Get me a ticket," said I. He did so at Bristol, which looked so like London, in the matter of atmosphere and climate, that I almost imagined we were all back again in town and wallowing around in cold pea-soup. There I fell asleep, and when I woke at Torquay it was a beautiful moonlight night, clear as crystal, with the moon swimming, bare as she was born, in a sky as smooth as a sea of dissolved turquoises.

Up at Torquay the sun draws everybody out of bed very early, and draws them all to the coffee room, where it makes the crystal sparkle, the silver shine, and the visitors put on so much side that they call to the head waiter to have the glare shut out, as if they had sunshine to throw away. Long before noon it has drawn everything and everybody out of doors—the asthmatic, the too-fat-ic, the rheumatic, the aristocratic, the noisy-brat-ic, and all the rest. It draws out not merely the gorgeous blossoms in the florists' shops, but other blossoms growing wild out of doors, such as the primroses and the white violets, which people pluck in the fields and then write about in the local papers—out of sheer conceit and self-glorification, to show how much better off they are than we who dwell in London.

Apparently it draws the seagulls, too, which come and sit in it where it bathes the rocks that jut out of the sea, and the waves shoot up these rocks and also up the sea walls as if they were so many little tongues bent upon licking off the warm rays. Where we grow jagged bits of bottles on our garden walls, the sun in Torquay draws out wreaths and garlands of fresh green vines and creeping plants. It draws the dogs out in the doorways and the cats out upon the garden paths. And what else is it but the sun that draws so many tons of cheap and tawdry "souvenirs of Torquay" all the way from Germany? Oh, the sun can draw even farther than that, for this morning I saw at least half-a-dozen bronzed boys in khaki who were drawn all the way from Africa. And each one in his turn was drawing the delighted but surreptitious gaze of the aproned maids who popped out of the shops and into the dwelling house basements.

There are miles and miles of pretty green drives here in Sunshineland—or walks, if you prefer that way of enjoying your sun bath. There are benches in the full blaze of the sunshine beside the glittering sea. There are the public gardens, where they say that geraniums and chrysanthemums were blooming until a touch of frost came—at the time that snow fell in London. Were it not for that, we might see the English lemon in bloom in some gardens, and perhaps the palms would put out their flowers. But the public gardens are green and springlike without the blossoms, and the palms grow out of doors with a backing of mounds of verdure on the garden terraces of the seven hills that Torquay is built upon.

It is all warm and cosy, and good to participate in without hunting for such proofs of the joys of sunshine as greenery, flowers, and the tables in the hotel circulars, which show how very nearly like that of the Riviera is this sunlit verandah of wintry England. The tale is told in the sight of the many aged men who are seen making slow progress with their heavy walking sticks upon the shining streets, and of the plentiful invalids and convalescent Army officers recovering from fevers and wounds. But though there is much joking about these, it is not only the sick and aged who are drawn to this playground of the sun. Troops of happy children are rushing about, scores of active men are resting here, and Cupid seems very busy with a lot of stalwart youths and peachy maidens, who appear most to favour what an Irishman once called the "double loneliness" of floating about in small boats on the dimpled and jewelled bay.



—



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[REDACTED]

[REDACTED]

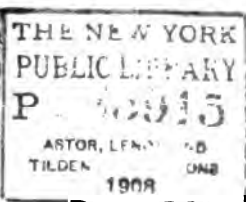
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11

BOROUGH OF TORQUAY.



Annual Report

OF THE

MEDICAL OFFICER OF HEALTH,

Eighteenth Report on the Sanatorium,

The Sanitary Inspectors Reports,

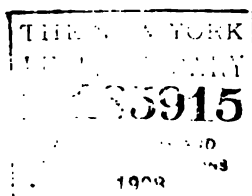
SCHOOL ATTENDANCE OFFICERS REPORTS,

AND

METEOROLOGICAL REPORT

For 1902.





Borough of Torquay.

ANNUAL REPORT OF THE Medical Officer of Health For 1902.

VITAL STATISTICS.

Area of the Borough in Acres	...	...	3,858
Rateable value	...	...	£187,000
Population (Census 1901)	...	...	33,625
Average of Population per acre	...	...	8.66
Number of Houses inhabited	...	...	6,614
Average number of Persons per house	...	...	5
Death rate 1902	...	...	15.7
Average Death rate previous 7 years	...	...	15.9
Nett Death rate 1902	...	...	14.6
Death rate if <i>all</i> Visitors excluded	...	...	13.3
Average nett Death rate previous 7 years	...	...	14.3
Birth rate 1902	...	...	16.0
Average Birth rate for previous 7 years	...	...	18.1
Infant Death rate 1902 (under one year) per 1,000 births	...	...	155.5
Average ditto for previous 7 years	...	...	138.8

BIRTH RATE.

During 1902 there were 540 Births, viz., 287 Boys, 253 Girls.

This yields a birth rate of 16 per 1,000. Average for the previous 7 years is 606, or a rate of 18·1.

This birth rate of 16 per 1,000 is the lowest yet recorded for Torquay, showing that the steady decline is still going on.

The birth rate in England and Wales in 1902 was 28·6.

DEATH RATE.

The number of deaths which took place was 529, or a rate of 15·7 per 1,000 ; while the average for the previous 7 years is 535, or 15·9 per 1,000.

The death rate in England and Wales in 1902 was 16·3.

UNDER ONE YEAR OF AGE.

The death rate among children under one year of age, estimated at per 1,000 births registered, is 155·5, which is considerably above the average of the past 7 years, viz., 138·8.

NETT DEATH RATE.

Making the deductions allowed by the Local Government Board, viz., all visitors dying in public institutions, we get a nett death rate of 14·6 per 1,000.

If as in previous years the deaths of all visitors were deducted, our nett death rate would be 13·3 per 1,000.

COMPARATIVE TABLE AS REQUIRED BY THE LOCAL GOVERNMENT BOARD.

DEATHS IN THE LOCAL GOVERNMENT BOARD													
Year.	Population estimated to Middle of each Year.	Births.		Deaths under One Year of Age.		Deaths at All Ages. Total.		Deaths in Public Institutions.	Deaths of Non-Residents registered in District.	Deaths of Residents registered beyond District.	Deaths at All Ages. Nett.		
		Number.	Rate.*	Number.	Rate per 1,000 Births registered.	Number.	Rate.*				Number.	Rate.*	
1	2	3	4	5	6	7	8	9	10	11	12	13	
1895.	33100	652	19.6	102	155	583	17.6	41	55		528	15.9	
1896.	33200	650	19.5	107	163.7	569	17.1	43	41		528	15.9	
1897.	33300	630	18.9	81	127.9	502	15	43	83		419	12.5	
1898.	33400	626	18.7	83	131.9	529	15.5	53	70		459	13.7	
1899.	33500	573	17.0	84	143.1	570	17	31	49		529	15.5	
1900.	33600	559	16.6	70	124.6	488	14.5	41	58		430	12.8	
1901.	33600	556	16.5	70	125.3	504	15.0	51	28		476	14.1	
Averages for years 1892-1901.	33385	606	18.1	85	138.8	535	15.9	43	55		481	14.3	
1902.	33600	540	16.0	84	155.5	529	15.7	63	38		491	14.6	

* Rates in columns 4, 8, and 13 calculated per 1,000 of estimated population.

NOTE.—The deaths to be included in Column 7 of this table are the whole of those registered during the year as having actually occurred within the district or division. The deaths to be included in Column 12 are the number in Column 7, corrected by the subtraction of the number in Column 10 and the addition of the number in Column 11.

By the term "Non-residents" is meant persons brought into the district on account of sickness or infirmity, and dying in public institutions there; and by the term "Residents" is meant persons who have been taken out of the district on account of sickness or infirmity, and dying in public institutions elsewhere.

The "Public Institutions" to be taken into account for the purposes of these tables are those into which persons are habitually received on account of sickness or infirmity, such as hospitals, workhouses, and lunatic asylums. A list of the institutions in respect of the deaths in which corrections have been made should be given on the back of this table.

Small-pox						
Measles	2	1	1			
Scarlet Fever						
Whooping-cough	9	7	2			
Diphtheria and Membranous croup	1		1			
Croup	2		1	1		
Fever { Typhus						
Enteric	2				2	
Other continued						
Epidemic influenza	1					1
Cholera						
Plague						
Diarrhoea	4	3	1			
Enteritis	5	3				
Interperal fever						1
Erysipelas	1					
Other septic diseases						
thisis	48	1			12	34
Other tubercular diseases	11	4	2	1	3	1
Cancer, malignant disease	35					19
Pneumonia	47	12	6	2		9
Emphysema	20	4			2	7
Other diseases of respiratory organs	3					2
Alcoholism	7	1				2
Cholera of liver	6					3
Cerebral diseases						
Immature birth	15	15				
Diseases and accidents of parturition	1					1
Birth diseases	58			1	1	27
Accidents	11	3				4
Other causes	3					3
Other causes	199	37	7	3	5	48

In October cases were very numerous among the children attending Torre Infant School, over 40 per cent. being absent from that cause. A closing order was therefore issued on October 3rd, and the school re-opened on November 3rd, and no further cases were reported after that date.

WHOOPIING COUGH.

Whooping cough was much in evidence during the year, and 9 deaths were due to this cause, 7 of them occurring in babies under one year of age.

One school was closed owing to the number of cases among its scholars, viz., the Pimlico Schools, which were closed on July 24th.

ENTERIC.

During the year eight cases were notified. Of these one was a secondary case, caught from a case notified in 1901. Two were imported cases, that is, contracted the disease elsewhere but came to Torquay to live during incubation period. One case was notified in error, and four cases arose probably from eating shellfish, as all were clearly proved to have eaten cockles about the time the disease was "caught." Unfortunately, two ended fatally.

PHTHISIS.

Forty-eight deaths, with eleven from "other tubercular diseases," is less than usual from these causes, about seventy deaths from Phthisis being usually registered.

As in previous years, an offer has been made to disinfect rooms after a death from this cause, but in too many cases the offer is declined, and at present Sanitary Authorities have no power to enforce such disinfection.

SCARLET FEVER.

Seventeen cases were notified during the year, and sixteen were removed to the Sanatorium.

The disease was generally of a mild type, and again no death occurred from this cause.

Table III. gives the cases of Infectious Disease notified during the year 1901 :—

CASES OF INFECTIOUS DISEASE NOTIFIED DURING THE
YEAR 1902.

NOTIFIABLE DISEASE.	At all Ages.	At Ages—Years.					
		Under 1.	1 to 5.	5 to 15.	15 to 25.	25 to 65.	65 and upward.
Small-pox							
Cholera							
Diphtheria	9		3	4	2		
Membranous croup ..							
Erysipelas	3				1	1	1
Scarlet fever	17		3	10	4		
Typhus fever							
Enteric fever	8				4	4	
Relapsing fever							
Continued fever							
Puerperal fever							
Plague							
Chicken Pox	33	1	11	18	3		
(From Mar. 14 to end of year).							
Totals	70	1	17	32	14	5	1

The Eighteenth Annual Report of the Sanatorium appended.

The above statistics were prepared by the Acting Medical Officer of Health,

ALDERMAN DR. G. MITCHELL WINTER,

*Chairman of the Sanitary Committee
of the Torquay Town Council*

1903.

BOROUGH OF TORQUAY.

THE MEDICAL OFFICER'S EIGHTEENTH REPORT ON THE SANATORIUM

For the Year ending 31st March, 1902.

TO THE CHAIRMAN OF THE SANITARY COMMITTEE.

SIR,

At the close of the financial year 1900-1901 there were three patients under treatment, and from that date to March 31st, 1902, fifty-five fresh cases were admitted, making a total of fifty-eight patients who have been inmates of the Sanatorium during the year 1901-1902.

One was a case of diphtheria, one was chicken pox, one was measles, and the remainder were scarlatina. All were discharged cured.

The diphtheria case was from a villa; the chicken pox case was a visitor staying in a private hotel; and the patient with measles was a sailor from one of H.M.'s ships.

The cost of the last-mentioned case was paid by the Admiralty, three cases were paid for by the Poor Law Guardians, and two patients hired private rooms and paid the usual charges.

Seven patients came from villas, one from an educational establishment, one from a private hotel, one from the Fleet, and the remainder from the homes of the working classes.

The cost of working during the twelve months will be seen from the following account:—

Conveyance of Patients	...	...	...	£90
Coal, Coke and Wood	...	...	...	...
Rent of Telephone (proportion)	...	...	...	...
Fire Appliances	...	...	...	...
				£90
RECEIPTS.				
Paid by Patients	...	...	...	...
Deficit	...	...	...	8
				£90

These figures should be compared with those of the previous year:—

8 Report	...	30 Patients cost	„	493	13	2	...	Deficit
9	„	35	„	513	14	11	...	„
0	„	42	„	564	2	10	...	„
1	„	26	„	515	15	11	...	„
2	„	58	„	903	6	6	...	„

This is a very heavy expenditure, but at the same time it is accounted for. Cockington Hospital, which is still owing £34 19s. 8d., and St. Mary-Church Hospital owing £3. The new fire appliances cost £49 8s. 6d., and the new ward so as to obviate any risk of fire caused the greater portion of the Surveyor's expenditure to meet an emergency a purchase of bedding, and this cost £22.

On one occasion there were thirty-one patients in the same time, and of course this necessitated the purchase of bedding, etc., etc.

BOROUGH OF TORQUAY.

ANNUAL REPORT
OF
THE SANITARY INSPECTOR.

*To the Worshipful the Mayor, Aldermen, and Councillors
of the Borough.*

MR. MAYOR AND GENTLEMEN,

I have the privilege to submit this, my Twenty-fifth Annual Report to the Council.

The principal work of the year has been, as usual, the alteration of defective drains and sanitary arrangements of all classes of houses—in the villas and superior houses on being re-let or sold, and in the others on complaint, or where illness occurred.

No fewer than eighty-four houses of the former class were thoroughly examined, and, generally speaking, new drains and fittings of a modern type were laid and fixed.

The ten-shilling fee was paid for thirty-four houses for which new certificates were required, prior to new tenancies or purchase. The number, 84, is slightly in excess of that (78) for the year 1901.

The Smoke and Water tests were applied 404 times, or fourteen more than in the previous year. Fifty-one of these were applied to New Buildings.

The drains of sixty-three ordinary houses were also overhauled and rectified.

In all new systems of house drainage, provision is made for ready access to the intercepting traps ; and at all turns in the line of drains by means of inspection chambers ; as many as half a dozen being built, lined with cement, and fitted with iron frames and covers to most of the larger houses, and one at least at the trap for the smaller ones. The sanitary arrangements of three of the largest hotels were thoroughly examined and tested, and my recommendations as to necessary alterations were duly executed.

The Milkshops, Dairies, and Cowsheds under my charge have been inspected at various times, and, I am pleased to report, were found, most of them, in a very creditable condition. The cowsheds just outside the Borough in Cockington were twice examined in company with the late Medical Officer, and were found satisfactory.

The Common Lodging Houses, the Slaughter House, and Marine Stores have been visited, and, where faults were found, immediate action was taken to remedy them.

Fumigation of premises after infectious disease took place only 17 times, eight being after death from Phthisis ; a similar number declined my offer to disinfect. Disinfectants were supplied 57 times.

The important work of inspecting Factories and Workshops, ordered by the Act of 1901, has been commenced, and several have been examined and measured as to cubic space. This duty is more onerous and arduous than might be supposed, as it means a thorough examination of the premises as to sanitary arrangements, cleanliness, air space, and ventilation ; and as the lines upon which these surveys were to be conducted were not laid down till after consultation with His Majesty's Factory Inspector well on in the past year, it has been impossible to deal with over one hundred premises, large and small, which have been placed under my supervision. I purpose making an exhaustive examination and report during the present year.

The number of New Buildings examined and drain-tested before occupation in 1902 was 27, as compared with 47 last year. The most important erections are the two new Banks for Messrs. Lloyd & Co., the principal one not yet completed ; the fine villa on the Pilmuir Estate, which has engaged a good deal of my time testing the elaborate drainage system in sections ; and the new aisle for the Catholic Church in Abbey Road.

Ten of the new houses are situated in the Chelston Ward.

The Office work, comprising the keeping of the necessary books for all branches of duty, viz., new buildings occupation book, drainage of ditto book, general report and monthly report books, diary, dairies book, and the correspondence, which amounted to 325 communications, occupies a good deal of time and care. Copies of all documents are kept.

I am glad to state that but one Legal Notice was required during the year, and no legal proceedings; the whole of the sanitary improvements were effected without resort to compulsory measures, and, generally speaking, with willingness and good feeling on the part of those concerned.

I trust to be authorised to prepare a report on Twenty-five Years' Sanitary Progress in the Borough of Torquay; as that period will have expired on 25th of March next. I may state that the late able Medical Officer of Health, on the occasion of his visitation in Chelston with me, expressed a wish that some record of the quarter of a century's work should be made, as the period referred to, witnessed some striking changes in sanitary construction, sanitary methods, as well as the diminution of certain zymotic diseases, peculiarly attributable to bad sanitary arrangements.

I am, Mr. Mayor and Gentlemen,

Yours obediently,

CHARLES MACMAHON,

*Cert. San. Inst.; Assoc. M.B.I.P. Health;
Chief Sanitary Inspector and Surveyor of New Buildings.*

Town Hall Chambers, Torquay,
20th January, 1903.

BOROUGH OF TORQUAY.

Assistant Sanitary Inspectors' Reports.

*To His Worship the Mayor, Aldermen, and Councillors
of the Borough of Torquay.*

GENTLEMEN,

I have the honour to lay before the Council my Fifth Annual Report for the year ending December 31st, 1902.

Fifty-three tenement and other houses and premises, with a population of two hundred and sixty-six, have been inspected under the house-to-house inspection, and in forty-two instances the drainage of the houses were tested.

In connection with this work, thirty-two notices were served to abate the various nuisances found on such inspection. Thirty of these notices were preliminary and two legal.

The Districts inspected were—

St. Edmond's Terrace, Columbia Terrace, Hoxton Road (part), Cavern Road (part), Meadfoot Lane (part).

Sixty-four houses and premises have been visited and inspected on complaint or by request, and twenty-eight smoke or hydraulic tests applied to drains, and fifty-four notices served to abate nuisances. Fifteen of these were legal.

Two hundred and thirty-three visits of inspection have been made to premises where work was in progress, and also one hundred and sixty-three smoke and ninety-four hydraulic tests applied to drains after alterations to same.

Upon application for Sanitary Certificates, nine houses and premises have been examined and reported upon, and on completion of the necessary work the certificates were granted, except in one instance.

In connection with this work, twenty-eight smoke and twenty four hydraulic tests were made.

In connection with the new buildings in that portion of the Borough assigned to me, thirty-two smoke tests were applied to the drains of twenty-six houses and premises, and twenty-nine visits of inspection made.

I have during the month of April, and again in October, inspected thirty-two Milkshops, Dairies, and Cowsheds in various parts of the Borough; in five instances it was necessary to enforce limewashing and cleansing, the rest were found in a satisfactory condition.

Also, during the months June—July, and again during November—December, the Dairies and Cowsheds on thirty-two farms outside the Borough (and from which milk is sent into the Borough) have been visited and inspected with the late Medical Officer, and in nearly every instance considerable improvements have taken place since the first inspection, and a desire shewn to comply with the requirements.

The new Factory and Workshop Act of 1901 has imposed additional duties on the Sanitary Department, and in connection with this work a considerable amount of time has been occupied, as, amongst other things, every workroom or workshop has had to be measured up in regard to the provision of the specified cubic space per head.

Some forty-four premises (out of a probable list of a hundred or more) have been visited and inspected in that portion of the Borough assigned to me, and in fourteen instances it was found necessary to serve notices to remedy defects.

The front basement rooms at six premises illegally occupied as cellar dwellings have been closed, and legal notices were served in connection with the same upon the owners in each instance.

In one instance, during the month of August, it was found necessary to serve a notice on the owner of certain stables, let for sleeping purposes to French onion hawkers; overcrowding was taking place, and the stables were in a dilapidated condition and totally unfit for habitation.

In connection with the disinfection of premises in Phthisis in my district, I may point out that those not at present come under the "Infection Act," and therefore it was not possible to disinfect, but in every instance offers to do so to the occupiers of the houses in which the cases occurred. Following comparative table for the last three years, showing what result:—

Year.	No. of cases.	No. of disinfections.	R
1900	42	20	
1901	45	14	
1902	25	9	
Total ...	112	43	

I am, Mr. Mayor and Gentlemen,

Yours obediently,

WILLIAM L. B. ...

*To His Worship the Mayor, Aldermen, and Councillors
of the Borough.*

GENTLEMEN,

I beg to submit to you my Annual Report relating to the St. Mary-Church District for the year ending 31st December, 1902.

Nine deaths from consumption were reported, and in eight instances the rooms were disinfected. In the previous year (1901) one death from this disease was reported in this district, and permission to disinfect those premises was refused.

Eight cases of Infectious Disease, viz., four scarlet fever, two chicken-pox, and two typhoid fever, were reported, and disinfection was carried out in each case. One room was disinfected after death had occurred from cancer. In all eighteen rooms were fumigated. In connection with this work, the drains of two houses were tested, and one, which was found defective, was relaid.

One hundred and four premises were visited on receiving various complaints. In conjunction with these visits, thirty-two house drains were examined, and, twenty-eight being found defective, were relaid or thoroughly repaired.

Twenty-seven water-closets were supplied with efficient flushing cisterns. Ten choked drains were cleared. Seven nuisances, arising from the keeping of animals on premises, were abated. Thirteen deposits of refuse and manure were removed, and five other nuisances were abated.

During the past year twenty-six houses were visited, and the drains thereof tested in connection with district or house-to-house inspection. Fifteen notices were served to abate the nuisances found on such inspection, and in eleven instances the house drains were relaid or repaired where necessary; and five water-closets, which were without flushing apparatus, were provided with the same.

In addition to this, the drains of thirty-one premises were relaid or put in order, in compliance with notices remaining over from last year's house-to-house inspection.

Thirty premises were inspected and the drains tested on request of the owner or occupier, the fee of ten shillings being paid in thirteen cases. In twenty-six of these houses the drains were found defective and were relaid. Eighty-seven per cent. of those premises visited by request were villas or large dwelling-houses. Much attention and close supervision were needed whilst the works were in progress, to ensure that the sanitary requirements of the Town Council were carried out in an efficient manner.

Twenty-three Sanitary Certificates were granted, as compared with eleven last year.

The Dairies, Cowsheds, and Milkshops in the District were inspected in the Spring, and again in October. In those cases where limewashing was required the occupiers were notified, and many cowsheds have been revisited since to ensure that this requirement was effected. In one instance a cowshed was entirely repaved and drained.

During the months of May and October, our late Medical Officer and I inspected many cowsheds situated outside the Borough, and from which milk-dealers in the town get their supplies. Without exception, these sheds were found in a satisfactory state.

The Slaughter-houses and Bakehouses in the district were inspected in due season, but, beyond a little limewashing in some places, there was nothing of which to complain.

Samples of water were taken from the few remaining public wells and pumps in the district, and were submitted for analysis.

During the past year, twelve New Buildings have been erected, as compared with nine last year. The drainage of these buildings was tested in sections as the work proceeded, and again on completion. Beyond this, six premises were inspected and the drainage thereof tested in consequence of alterations or additions being executed. A total of sixteen drainage and fourteen habitation certificates were issued during the year.

The Factory and Workshop Act of 1901, which came into operation on 1st January, 1902, has considerably augmented the duties of this office. A list of some forty workshops, situated in this district, was received from the Home Office. On inspection, it was found that many had to be registered which

did not appear on that list. This number will be still further increased as we become aware of the existence of other workshops. Considerable time was spent in measuring the cubic capacity of the several rooms in the various Workshops and Laundries. In all some sixty rooms were measured. Attention was also directed to the sufficiency and means of ventilation, and to the sanitary accommodation.

In Laundries, it was necessary to see that ample means existed to drain the floors, rendered wet by reason of the process carried on.

The drains of three laundries were relaid throughout, and four water-closets in connection with workshops were supplied with water.

I am, Mr. Mayor and Gentlemen,

Yours obediently,

H. RUSSELL SMITH,

*Cert. San. Inst. ; Sanitary Inspector ;
and Inspector of New Buildings, and of Dairies and Cowsheds.*

Town Hall, St. Mary-Church, Torquay,
20th January, 1903.

BOROUGH OF TORQUAY.

SCHOOL ATTENDANCE.

Annual Reports

For the Year ending 31st December, 1902.

*To the School Attendance Committee for the Borough of
Torquay.*

GENTLEMEN,

I have the honour to present to you my Fifteenth Annual Report, giving the Head Teachers' returns for the year 1902, and, by way of comparison, those for the year previous.

Year.	Average Number on Books.		Average Attendance.	Percentage.
1902 ...	...	2,952	2,529·0	85·7
1901 ...	...	2,953	2,497·2	84·5
Decrease ...		<u>1</u>	Increase ... <u>31·8</u>	Increase ... <u>1·2</u>

SEPARATE RETURNS OF BOYS, GIRLS, AND INFANTS.

	On Books.	Average Attendance.	Percentage.
1902 Boys ...	919	843	91·7
1901 „ ...	940	829	87·9
Decrease ...	<u>21</u>	Increase ... <u>14</u>	Increase ... <u>3·8</u>

		On Books.	Average Attendance.	Percentage.
1902	Girls ...	940	820	87.2
1901	„ ...	909	783	85.9
	Increase ...	31	Increase ... 37	Increase ... 1.3
		On Books.	Average Attendance.	Percentage.
1902	Infants ...	1,093	866.0	79.1
1901	„ ...	1,104	905.5	81.3
	Decrease...	11	Decrease 39.5	Decrease 2.2

Included in the 1,093 Infants, 386 are under five years of age.

The attendances were adversely affected last year through the prevalence of whooping cough and measles. Four Infants' Schools were closed for various periods, and many children living in houses in which there were cases had to be excluded from the schools remaining open.

During the year 1902, the School Attendance Committee held 11 meetings, and dealt with 454 cases of irregular attendances; 244 warning letters were sent to parents, and 38 summonses ordered; 5,425 visits were made by your officer to parents of children reported absent, as against 3,955 the year previous.

The prosecutions taken resulted in one fine of 15s., two of 10s., seven of 7s. 6d., one of 6s., fourteen of 5s., and one of 2s. 6d. Two boys were committed to the Mount Edgcombe Training Ship, and one to the Devon and Exeter Industrial School; seven attendance orders were granted, and two cases dismissed with a caution. Total amount of fines, £7 10s. In the year previous 54 summonses were issued, and the amount of fines inflicted £8 3s. 6d.

There are at present three boys on board the Training Ship, and two in the Devon and Exeter Industrial School, who were committed to the institutions named on the application of your Committee. There is also one boy from my district in the West of England Institution for the Blind.

I beg to thank the Magistrates and School Attendance Committee for their kind support during the past year, and remain

Gentlemen,

Your obedient servant,

G. R. STONE,

School Attendance Officer.

Dated Jan. 14th, 1903.

REPORT

For the Year ending 31st December, 1902.

*To the School Attendance Committee of the Borough of
Torquay.*

GENTLEMEN,

In presenting to you this my Third Annual Report with respect to the Babbacombe, Ilsham, and Victoria Park Schools, I beg to state that the returns show

The Average Number on Books of Boys and Girls is	256
" " Infants over five	108
" " Under five ...	76
Total average on books	440
The Average Attendance of Boys and Girls is	234·6
Percentage ...	91·6
" " Infants over five...	94·7
Percentage ...	87·6
" " Under five ...	62·4
Percentage ...	82·1

There has been some sickness among the children, and sometimes bad weather, which prevented them from making good attendance.

During the year, 65 warnings to parents, and 7 notices to employers, have been served.

46 cases for investigation have been brought before you; 14 summonses have been applied for; the fines were three of 5s., one 6s.; one 7s., four 7s. 6d. each, one 10s., and one 15s. Two attendance orders were granted, and one case dismissed with caution.

There is one child, Beatrice Cumming, who is now in the
Blind Institution at Exeter.

I am, Gentlemen,

Your obedient Servant,

A. HUGO, S.A.O.

BOROUGH OF TORQUAY.

Average Number on Books, In Average Attendance, and Percentage for each School in No. 1 District, for the year ending 31st December, 1902.

NAME OF SCHOOL.	BOYS.			GIRLS.			INFANTS.				REMARKS.
	Average No. on Books.	In Average Attendance.	Percentage on Avg. Attendance.	Average No. on Books.	In Average Attendance.	Percentage on Avg. Attendance.	Average No. on Books.	In Average Attendance.	Percentage on Avg. Attendance.	Number under five years of age.	
Tor	175	161.9	92.5	185	165.6	89.5	124	104.7	84.4	57	Infant School closed from 6th October to 3rd November through epidemic of Measles and Whooping Cough.
Upton	201	178	88.5	207	185	89.3	90	68	75.5	31	
Torwood	63	56.1	89.0	69	63.3	91.0	45	38	84.0	16	
S. Luke's, Pimlico ..	112	97	87.0	88.5	74	83.6	93	67.4	72.4	35	Infant School closed from 24th July to 21st August—Whooping Cough.
S. Luke's, Rock Road (Infants.)							72	61.8	85.5	16	Closed from 24th July to 21st August—Whooping Cough.
Ellacombe	312	275	87.0	296	256	82.0	326	254.1	85.0	122	Infant School closed from 15th July to 1st August—Measles and Whooping Cough.
S. John's	46	38.4	83.0	1	56.6	79.7	54	42	77.7	25	
S. James' (Infants.)							267	214	80.0	78	
Roman Catholic ..	25	21.9	87.6	24	19.7	82.1	22	15.9	72.0	6	
TOTALS ..	934	828	88.5	940	820	87.2	1,093	866	79.2	386	

METEOROLOGICAL REPORT

FOR THE YEAR 1902.

*To the Worshipful the Mayor, Aldermen, and Councillors
of the Borough of Torquay.*

GENTLEMEN,

I have the honour to submit the appended Report upon work done at the Borough Meteorological Stations during the year 1902.

The usual equipment of instruments has been maintained at the Cary Green Station, and these readings continue to be the official readings furnished to the Royal Meteorological Society, and published in the town each day. Supplementary readings have been taken continuously at the Princess Pier Station; these have served to check the Cary Green readings, and to extend the sphere of observations. After careful and prolonged test, it was found that the Campbell-Stokes Sunshine Recorder gave excellent results in the temporary site found for it on the covered seats at the end of the Pier. Sunshine readings have been taken there alone since April, the Chapel Hill station being finally abandoned. The Jordan Photographic Instrument is fixed alongside the Campbell-Stokes Recorder, and read daily.

The usual Monthly Reports have been prepared for the Royal Meteorological Society and the Directors of the British Rainfall Organization, and these Returns have been published in abstract in the "Torquay Directory" and "Western Morning News," and have been posted in the town.

A weekly report of bright sunshine has been furnished to the Meteorological Office, and the thanks of the Council have been received for the same. Advice has been very courteously and willingly given by Mr. R. H. Curtis, of the Meteorological Office, on several occasions. A report on the "Week's Weather" has also been published locally in the "Torquay Directory" and the "Devon and Exeter Express." Notes upon exceptional

weather have been furnished from time to time to the local papers, and, through their Torquay representatives, to the London Press. The usual letters of enquiry have been received from persons who have heard that Torquay is torrid in the summer and a swamp in the winter, and who wish to be re-assured.

The morning observations have been posted each day throughout the year at the various stations in the town, and at the Museum of the Natural History Society. There is no doubt that public interest in these returns has greatly increased, as a result of the greater prominence now given to the meteorological work.

A telegraphic summary of the day's weather, with observations, has been furnished to the following papers:—"London Standard," "Daily Chronicle," "Daily Telegraph," "Daily News," "Daily Express" (part year only), "Liverpool Post," "Manchester Guardian," "Newcastle Chronicle," "Liverpool Journal of Commerce," "Bristol Mercury," "Sheffield Independent," "Leeds Mercury," Bradford "Yorkshire Observer" (summer only), "Birmingham Daily Post" (summer only), and the "Western Morning News."

Through the courtesy and enterprise of the Great Western Railway, the arrangement has been continued under which an evening report of the day's weather has been circulated to 23 stations and receiving offices of the Great Western system. By this means, over 8,000 telegrams have been posted in such centres as London, Birmingham, Oxford, Shrewsbury, Cardiff, Liverpool, and Manchester, at a trifling cost.

I am, Gentlemen,

Your obedient Servant.

FREDERICK MARCH.

OBSERVATORY AND INSTRUMENTS.

The Observatory is organised and maintained by the Town Council, and is under the supervision of the Royal Meteorological Society.

The several Barometers, Thermometers, and Rain Gauges have been verified at Kew Observatory, and regularly examined by a representative from the Royal Meteorological Society. Readings are all corrected for instrumental errors.

The Hygrometrical Results are deduced from the daily morning readings of the Dry and Wet Bulb Thermometers by means of Glaisher's Tables.

The averages for Sunshine are the result of 14 years', for Temperature and Rain 'all of 26 years', and for Pressure of 18 years' observations.

The following are the instruments and appliances in regular use, those marked with an asterisk being the property of the Torquay Natural History Society, and by them lent to the town :—

* The **Barometer** is a Fortin Standard and is read twice daily, at 9 a.m. (local time) and at about 5 p.m. All readings are reduced to 32° F. and mean sea level, and are thus comparable with all readings similarly reduced.

* An **Aneroidograph**, by Richard Freres, gives in graphic manner the alternations of pressure.

There are two double louvred **Stevenson's Screens**, each containing **Dry and Wet Bulb**, and **Maximum and Minimum Thermometers**. The instruments are of Casella's make, and are so placed that the bulbs of the hygrometer are 4 feet above the level of the grass. One of these sets has been working throughout the year at Cary Green, where the official temperatures for the Royal Meteorological Society have been taken, the other in the Princess Gardens.

A third ***Stevenson's Screen**, also double louvred, has been in position in the Princess Gardens, and has held a ***Thermograph** or Self-recording Thermometer and an **Ozonometer**.

***Solar Radiation Thermometers**, black bulb in vacuo and bright bulb in vacuo, are contained in a stand of their own, which has been placed in the Princess Gardens.

The **Grass Minimum** is by Hicks, and is placed on Grass in the Princess Gardens about an inch above the ground. The readings have been far more satisfactory since its removal to this site.

The **Rain Gauges** are of copper, by Casella, and of Snowdon pattern. They are placed, one on Cary Green, one in the Princess Gardens, with the upper edge 12 inches above the level of the ground.

The **Sunshine Recorders** are placed upon the covered shelter at the southern end of the Pier-deck.

They are—

(1.) A Curtis' Improved Campbell-Stokes instrument, fitted with a $3\frac{1}{2}$ inch spherical lens of crown glass, and working on the principle of the burning-glass.

(2.) A Twin Jordan Photographic Recorder, which works by the differentiation in colour effected by bright sunlight on specially prepared chemical paper.

DURATION OF BRIGHT SUNSHINE

In hours and tenths of an hour,

As recorded by the Jordan Photographic Twin Instrument.

1902.	Total Bright Sunshine.	Difference from Camp- bell-Stokes Record.	Greatest Amount in one day.	Date.	Sunless Days.
January	52·7	— 3·1	7·5	30th	13
February	88·0	— 4·6	7·4	1st	12
March	107·8	+ 8·5	9·3	6th & 15th	7
April ..	163·2	+ 10·3	12·9	28th	2
May	223·7	— 11·5	13·8	19th	1
June.....	170·8	— 2·7	14·8	27th & 28th	2
July	230·4	— 15·3	14·5	15th	2
August.....	168·3	— 8·8	12·2	15th	3
September.....	173·8	+ 0·8	10·6	17th	3
October	85·3	— 8·2	8·6	14th & 21st	5
November	59·6	— 9·6	6·0	4th	11
December	49·8	— 2·8	5·9	2nd	15
Year.....	1573·4	— 47·0	14·3	June 27th & 28th	76

DURATION OF BRIGHT SUNSHINE

In hours and tenths of an hour,

As recorded by the Campbell-Stokes' Standard Instrument.

1902.	Total Bright Sunshine.	Percentage Actual of Possible.	Difference from Average.	Greatest Amount in one day.	Date.	Percentage Actual of Possible.
	Hours.	%	Hours.	Hours.		"
January ...	55·8	21·5	— 8·0	8·2	29th	92
February ...	92·6	33·6	+ 11·6	7·8	1st & 10th	81
March	99·3	27·3	— 43·5	9·8	21st	80
April	152·9	37·3	— 29·4	13·2	28th	92
May	235·2	49·5	+ 4·8	14·3	26th	90
June.....	173·5	35·7	— 62·6	15·1	27th	93
July	245·7	50·4	+ 27·8	14·8	15th	94
August.....	177·1	40·0	— 31·3	11·9	15th	83
September..	173·0	46·4	+ 9·3	10·3	18th	84
October ...	93·5	28·6	— 22·8	8·9	14th	84
November..	69·2	25·8	+ 6·0	7·1	4th	76
December ..	52·6	21·8	— 1·4	6·3	2nd	78
Year...	1620·4	36·8	— 139·5	15·1	June 27th	93

For Jordan Readings see p. 7.

REMARKS.

The total amount of bright sunshine registered by the Campbell-Stokes instrument—which was in 1899, 2038·9 hours ; in 1900, 1897·0 hours ; and in 1901, 1876·5 hours—fell last year to 1620·4 hours. It was commonly reported that the country had no summer, and there is good reason to believe that we in the West of England fared comparatively well. We had in Torquay only 13 days absolutely sunless from the beginning of April to the end of September, and the amount of sunshine registered in May, July, and September was in excess of the average : yet from the beginning of June to the end of September, the amount fell 56·8 hours below the average of 14 years, June being conspicuously deficient with the low summer percentage of 35·7 % of the possible. But even in this month of June we had the highest aggregate of stations in the S.W. of England reporting to the Royal Meteorological Society, and our sunshine was well ahead of the amount reported from half the stations up and down the country.

The summer sunshine—April to September inclusive—amounted to 1157·4 hours, or 6·3 hours per day ; and the winter sunshine—October to March inclusive—to 463 hours, or 2·5 hours per day.

The highest amount of sunshine registered was 15·1 hours on June 27th, which was 93 % of the possible for the day. A higher percentage, but lower amount, was registered in July.

The number of sunless days was 75, the greatest number recorded in Torquay. The year 1897 was dull with 73 sunless days, but then there was an aggregate of sunshine, measured by the Jordan instrument, of 1706·4 hours, or 133 hours in excess of 1902. Of the 75 sunless days, no fewer than 50 were in the months of January, February, November, and December, as against 31 in the previous year.

BAROMETRIC PRESSURE

In inches and thousandths.

Reduced to 32° F. and Sea Level.

1902.	Mean of Month.	Difference from <i>Mean</i> of Month.	Highest Reading.	Lowest Reading.	Extreme Range of Pressure.
January	30·217	+0·176	30·911	29·227	1·684
February	29·853	−0·151	30·552	29·246	1·306
March	29·893	−0·070	30·300	29·305	0·995
April	29·936	+0·163	30·340	29·443	0·897
May	30·029	+0·056	30·504	29·580	0·924
June..	29·902	−0·113	30·258	29·440	0·818
July	30·061	+0·072	30·299	29·522	0·777
August.....	29·931	−0·042	30·227	29·709	0·518
September	30·058	+0·044	30·465	29·645	0·820
October	29·987	+0·024	30·576	29·561	1·015
November	29·818	−0·133	30·298	28·941	1·357
December	30·096	+0·114	30·566	29·121	1·445
Year.....	29·982	+0·003	30·911	28·941	1·970

REMARKS.

The mean barometric reading for the year was 29.982, being 0.008 below the mean of 1901, and 0.003 above the average of 18 years.

The very high corrected reading of 30.911 was taken on January 15th; this is the highest reading of which we have any record. The lowest reading was 28.941, taken November 25th, giving an extreme range for the year of 1.970.

It will be seen that, following the normal, the variation of atmospheric pressure was at its maximum in the winter months and at its minimum in the summer months.

RAINFALL

In inches and hundredths.

1902.		Total Amount.	Difference from Average.	Wet Days.	Mean Wet Day Rainfall.	Greatest fall in 24 hours.
January ...	*C. G.	1·32	— 1·98	13	0·10	0·47
"	†P. G.	1·29		13	0·10	0·46
February ...	C. G.	1·61	— 1·12	9	0·18	0·47
"	P. G.	1·57		9	0·18	0·45
March	C. G.	2·23	— 0·31	13	0·17	0·44
"	P. G.	2·22		13	0·17	0·43
April	C. G.	2·05	— 0·37	13	0·16	0·84
"	P. G.	1·94		13	0·15	0·76
May	C. G.	1·39	— 0·59	15	0·09	0·42
"	P. G.	1·39		15	0·09	0·42
June	C. G.	3·22	+ 1·04	17	0·19	0·81
"	P. G.	3·21		17	0·19	0·82
July	C. G.	2·25	— 0·11	11	0·20	1·05
"	P. G.	2·16		11	0·20	1·02
August	C. G.	2·44	— 0·21	15	0·16	0·75
"	P. G.	2·37		14	0·17	0·69
September	C. G.	2·46	+ 0·07	11	0·22	0·80
"	P. G.	2·41		11	0·22	0·81
October ...	C. G.	3·51	— 0·44	17	0·21	1·38
"	P. G.	3·37		17	0·20	1·23
November	C. G.	4·93	+ 1·16	18	0·27	0·87
"	P. G.	4·73		18	0·26	0·81
December	C. G.	2·81	— 1·09	14	0·20	0·77
"	P. G.	2·69		14	0·19	0·66
Year	C. G.	30·22	— 3·95	165	0·18	1·38
"	P. G.	29·35		164	0·18	1·23

* Cary Green.

† Princess Gardens.

REMARKS.

The table on the opposite page, shewing as it does a deficiency in rainfall for all but three months of the year, will probably astonish all those who have not followed the matter closely. With a marked deficiency in sunshine, and a consequent increase in the number of days partially or entirely overcast, the year has seemed much wetter than it has really been; frequent complaints of the "incessant rain" reached the writer's ears in the summer, when really the downfall had been trifling. The total rainfall was 1"·69 below the average of the last 10 years, and 1902 was the driest year since 1898. This condition was general. "Taking the British Isles as a whole, the total rainfall of 1902 has been rather more than 10 % less than the average for the ten years 1890-99." ("Symons' Met Magazine," January, 1903.)

There has been no such abnormal day's rainfall as was chronicled last year. On two days only has the total exceeded one inch, and the heaviest amount was 1"·38 on October 9th.

Appended is a Rainfall Table for the last 10 years, this affording perhaps the fairest standard for comparison :—

1892	.....	24"·13	1897	.....	36"·28
1893	.....	25"·83	1898	.....	27"·62
1894	.....	43"·23	1899	.....	34"·90
1895	.....	34"·37	1900	.....	33"·09
1896	.....	26"·82	1901	.....	32"·82

Total, 319"·09. Mean of 10 years, 31"·91.

SHADE TEMPERATURES.

Taken at 9 a.m. (Local Time).

1902.	Maximum mean.	Minimum mean.	Max. & Min. mean.	Difference from Average.	Range mean.	Highest.	Date.	Lowest.	Date.
	°	°	°	°	°	°		°	
Jan. ...	49·8	41·0	45·4	+3·4	8·8	56·0	2nd	28·9	15th
Feb. ...	43·6	35·1	39·4	-3·7	9·6	54·2	24th	26·1	14th
March	53·2	41·5	47·4	+3·6	11·7	61·1	30th	34·4	6th
April .	53·8	41·9	47·9	-0·3	11·9	59·1	30th	34·4	13th
May ...	57·7	45·5	51·6	-1·5	12·2	69·9	24th	36·2	7th
June...	61·0	52·1	56·6	-2·3	8·9	70·3	27th	45·3	15th&18th
July ...	67·5	53·9	60·7	-1·0	13·6	77·5	15th	47·5	22nd
Aug....	67·0	55·4	61·2	-0·4	11·6	71·8	8th	48·3	2nd
Sept. ...	64·0	53·2	58·6	+0·3	10·5	68·4	1st	43·9	19th
Oct. ...	59·0	48·6	53·8	+2·0	10·4	62·8	26th	41·6	31st
Nov....	53·3	45·5	49·4	+2·0	7·8	64·7	1st	33·4	20th
Dec. ...	47·9	40·5	44·2	+0·8	7·4	56·2	17th	30·0	7th
Year	56·5	46·2	51·3	+0·2	10·3	77·5	July 15th	26·1	Feb. 14th

REMARKS.

The mean temperature of the air for the year was $51^{\circ}3$, being $0^{\circ}7$ above that of 1901, and $0^{\circ}2$ above the average of 27 years. The mean maximum temperature was $56^{\circ}5$, and the mean minimum $46^{\circ}2$. Dividing the year into four quarters, the averages work out as under:—

	Mean Maximum.	Mean Minimum.	Mean Temperature.
January to March ...	$48^{\circ}9$	$39^{\circ}2$	$44^{\circ}1$
April to June ...	$57^{\circ}5$	$46^{\circ}5$	$52^{\circ}0$
July to September ...	$66^{\circ}2$	$54^{\circ}2$	$60^{\circ}2$
October to December ...	$53^{\circ}4$	$44^{\circ}9$	$49^{\circ}1$

The highest temperature recorded was $77^{\circ}5$ on July 15th, and the lowest $26^{\circ}1$ on February 14th. The mean daily range averaged $10^{\circ}3$; for the six months, April to September, it was $11^{\circ}5$, and for the six months, January to March and October to December, $9^{\circ}3$; in no month did it exceed $13^{\circ}6$. This is striking evidence to the equability of the climate. Further evidence as to its equability is furnished by the following table, which shews extreme temperatures registered in selected typical towns during the summer months of July, August, and September, and the winter months of January, February, and March, 1901. The figures are taken from the official Record of the Royal Meteorological Society, and are the most recent available for an entire year.

EXTREME TEMPERATURES.

	MAXIMUM.			MINIMUM.		
	July	Aug.	Sept.	Jan.	Feb.	March.
TORQUAY	78.6	77.6	68.1	22.5	25.5	25.5
Bath	87.5	81.0	71.8	21.8	19.5	22.1
Bournemouth	79.8	79.6	67.4	15.2	24.2	23.5
Brighton	81.7	83.9	69.0	23.7	23.1	25.9
Buxton	87.1	77.3	68.4	23.5	8.9	16.9
Cheltenham	89.0	81.4	70.6	22.1	11.3	18.2
Eastbourne	83.5	78.4	70.4	25.0	22.7	26.4
Guernsey	84.0	77.7	71.5	26.6	27.0	29.2
Llandudno	89.5	76.5	71.0	25.0	25.5	27.5
Margate	80.1	79.1	73.0	24.7	16.7	28.6
Norwood	87.0	82.7	75.5	21.5	19.8	23.4
Regent's Park	86.8	83.0	75.5	22.0	19.5	24.8
Southport	88.4	76.7	70.2	19.1	21.0	22.5
Tunbridge Wells	88.0	80.7	73.6	20.4	19.9	23.2
Wakefield	86.8	80.4	71.4	21.2	20.2	24.2

HUMIDITY, CLOUD, OZONE, AND WIND

1902.	HUMIDITY.			CLOUD Cloud mean 1 to 10.	OZONE. Per centage of possible.			WIND Prevail Quarter
	Dry Bulb mean.	Wet Bulb mean.	Relative Humidity.		Mean Daily Amount.	Greatest Daily Amount	Least Daily Amount.	
	°	°	%		%	%	%	
January	44.5	42.1	82	8	48	90	10	W. & N.W.
February	38.8	36.8	83	7	37	75	10	N.E. & N.
March	47.4	45.0	82	8	53	80	10	W.
April	48.5	44.7	74	8	59	85	30	N.E. & W.
May	53.4	48.1	68	6	54	75	30	W.
June.....	57.1	53.8	80	8	50	70	20	E. & W.
July	62.4	57.3	71	7	43	90	10	W. & S.E.
August.....	62.6	58.3	75	7	37	60	10	W.
Sept.	59.5	55.6	76	6	52	85	20	E. & W.
October	53.9	50.9	80	8	50	90	10	N.W. & W.
Nov... ..	49.2	47.0	85	6	54	90	10	S.E. & S.
Dec.....	44.3	42.1	83	6	51	90	10	W. & E.
Year.....	51.8	48.5	78	7	49	90	10	W.

REMARKS.

The mean Dry Bulb reading for the year was $51^{\circ}8$: this is the actual temperature of the air at 9 a.m. The mean Wet Bulb reading, giving the temperature of air saturated with moisture, was $48^{\circ}5$. This difference indicates a Humidity of 78% of the possible, the same as in 1900 and 1901.

The mean daily amount of Cloud, estimated from an eye observation, where clear sky = 0, and entirely overcast = 10, was 7.

The ozone Test Papers and Scale used are Moffat's, and the principle on which the instrument works is the liberation of iodine by the action of ozone upon iodide of potassium contained in the paper, and the action of this free iodine upon starch, in solution of which the paper has also been soaked. This is only a rough test, but it is the same for all stations, and is approximately correct.

The mean daily amount of Ozone was 49% of the possible, with a maximum of 90% and a minimum of 10% of the possible.

It will be noticed with interest, that in the winter months the prevailing winds were distinctly westerly.

TABLE SHEWING COMPARATIVE HUMIDITY.

	Mean Humidity at 9 a.m.		Mean Humidity at 9 a.m.
TORQUAY	... 78%	Ilfracombe	... 83%
Southport	... 81	Brighton	... 79
Morcambe	... 84	Eastbourne	... 80
Harrogate	... 78	Weymouth	... 78
Llandudno	... 76	Newquay	... 84
Buxton ...	... 80	Manchester	... 79
Lowestoft	... 87	London	... 76
Margate ...	... 82		

SOLAR AND TERRESTRIAL RADIATION.

ON GRASS.

1902.	Solar Max. Mean	Highest.	Date.	Max. Solar Radiation.	Minimum mean.	Lowest.	Date.	Number of Days at 32° and below.	Mean Night period Vari- ation of Min. on Grass from Min. in
	°	°		°	°	°			°
Jan. ...	70·4	87·7	27th	20·6	35·9	22·6	15th	10	-5·1
Feb. ...	70·9	101·2	28th	27·3	29·9	18·9	11th	19	-5·2
March..	87·6	111·1	30th	34·4	36·2	26·4	7th	9	-5·3
April..	94·4	107·6	30th	40·6	35·5	25·4	13th	7	-6·4
May ...	96·6	111·3	29th	38·9	38·6	32·8	7th	0	-6·9
June...	98·4	113·9	23rd	37·4	47·5	38·9	15th	0	-4·6
July ...	103·9	115·5	4th	36·4	49·1	41·7	22nd	0	-4·8
Aug. .	104·8	117·2	25th and 31st	37·8	51·5	42·8	2nd	0	-3·9
Sept .	104·4	117·3	1st	40·4	48·8	38·3	18th	0	-4·4
Oct. ...	95·2	111·8	18th	36·2	43·6	34·2	31st	0	-5·0
Nov....	78·0	101·5	1st	24·7	40·6	32·2	20th	0	-4·9
Dec. ...	62·5	83·5	3rd	14·6	36·6	26·7	31st	7	-3·9
Year	88·9	117·3	Sept. 1st	32·4	41·2	18·9	Feb. 11th	52	-5·0

REMARKS.

The mean maximum solar temperature is taken with a sensitive maximum thermometer, which has the bulb and about an inch of the stem coated with dull lamp-black. The thermometer is enclosed in a vacuum tube and mounted four feet above the ground. The measure of solar radiation is found by subtracting the maximum reading of this instrument from the maximum of a shade thermometer, but the observation is not of much value.

The highest solar temperature registered was $117^{\circ}3$ on September 1st. It will be seen that the mean solar temperatures for July, August, and September were singularly even, though the amount of sunshine in July was 70 hours in excess of the other months.

The mean minimum temperature on the grass is taken with a sensitive spirit thermometer with minimum action. It will be seen that the *mean* was below freezing point only in the month of February; in the other months there were 33 days on which the ground temperature was at or below 32° F.

Many criticisms of these meteorological observations appear in various forms during the year; some obviously inspired by the jealousy of rival watering places; most based either upon prejudice or ignorance. It is not possible to notice them all; it is perhaps best, therefore, to notice none. The writer's plan is to ensure the accuracy of his instruments and to work steadily on, knowing that in the end the truth about our climate—cool in summer, mild in winter—must prevail. But, in connection with this question of minimum readings, a letter to the Press, by a highly intelligent correspondent, has been placed in the writer's hands, at the moment of dealing with these figures, and a word of comment upon it may be wise. This correspondent states that on the last day of the year 1902 there was a sharp frost. He gives evidence to prove this; but, he says, "the official return for that morning (*i.e.*, of minimum

temperature) was $33^{\circ}2!$ " He says two deductions are drawn from similar facts: (1) That the observer is inaccurate. This he is good enough to characterise as unfair. (2) That the observatory is placed in an unfit position, as near as possible to the warm waters of the English Channel. This he endorses.

Now two fallacies underlie this charge: the first is that readings are published from the Pier Station; whereas they are issued, as they always have been, from the Cary Green Station, selected and approved by the Royal Meteorological Society's Inspector as the fit and proper place to take typical temperatures. The second is that the term "minimum temperature" indicates the temperature of the ground; whereas in meteorological language it indicates the minimum shade temperature in the Stevenson screen, registered by a thermometer whose bulb is four feet above the level of the ground, and the reading of which is, on the average, 5° above the reading of the grass thermometer. On this particular occasion, the ground thermometer shewed 6 degrees of frost.

Thus, the charge that there is on the part of the authorities an attempt to give too favourable an impression of the climate of Torquay falls, in this instance, to the ground. An examination of similar statements would shew a like result. It should be sufficient evidence of good faith to all fair-minded men, that the climatological station occupies a site approved by the Royal Meteorological Society, and is under the regular inspection of the Society's officials.







OF TIME

For the Year 1903.

ITN

TOGETHER WITH THE

AND THE

Report of the Borough Meteorologist.



BOROUGH OF TORQUAY.



Annual Report

OF THE

MEDICAL OFFICER OF HEALTH

For the Year 1903,

BY

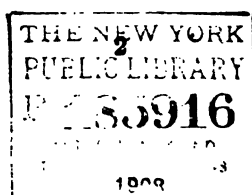
THOMAS DUNLOP, M.B., C.M., D.P.H.

TOGETHER WITH THE

Annual Reports of the Sanitary Inspectors

AND THE

Report of the Borough Meteorologist.



BOROUGH OF TORQUAY, 1903.

Area of the Borough, 3,858 acres.

Rateable value, £201,773.

Population—Census (1901), 33,625 ; estimated at the middle of 1903, 33,800.

Number of inhabited houses—Census (1901), 6,614 ; middle of year 1903, 6,762.

Average number of persons per house, 5.

Density of population, 8·7 persons per acre.

Crude death rate, 1903, 13·4 per 1,000. Average for previous 8 years, 15·9 per 1,000.

Corrected death rate, 1903, 13·3 per 1,000. Average for previous 8 years, 14·4 per 1,000.

Death rate if all visitors excluded, 11·5 per 1,000.

Birth rate, 15·8 per 1,000. Average for previous 8 years, 17·8 per 1,000.

Infantile mortality, 1903, 95. Average for previous 8 years, 142.

Death rate from zymotic diseases, 35 per 1,000.



Borough of Torquay.

ANNUAL REPORT
OF THE
Medical Officer of Health
For 1903.

*To His Worship the Mayor, the Aldermen, and Councillors of
the Borough of Torquay.*

GENTLEMEN,

In accordance with my statutory duty, I beg to present my Annual Report on the health of the inhabitants and the sanitary circumstances of the Borough of Torquay. Although my appointment dates from the 25th of March, 1903, I have been furnished by Alderman Dr. Winter, who acted as Medical Officer of Health for the first three months of the year, with full statistics and particulars, thus enabling me to present a complete report. The Medical Officer of Health is also required to report on the administration of the Factory and Workshops' Act in his district, and in this report are included details of the work done under this Act.

It is gratifying to be able to report the very low death rate of 13·4 per 1,000, being 2·4 per 1,000 lower than the average for the past 8 years, and 2 per 1,000 lower than the rate for England and Wales in 1903. The infantile mortality of 102 per 1,000 births is the lowest yet recorded.

I have to thank the members of the Sanitary Committee, and of the Town Council, for their kindness and support throughout the year, and also the Members of the Staff of the Department for the assistance I have always had from them.

I am, Gentlemen,

Your obedient servant,

THOMAS DUNLOP, M.B.

Medical Officer of Health.



POPULATION.

The population of the Borough at the 1901 census was found to be 33,625, of whom 13,339 were males, and 20,286 females. The number of inhabited houses being 6,614, and the average number of persons per house was 5.

For statistical purposes it is usual to estimate the population for the year under review. Taking the natural increase only, that is, the excess of births over deaths, I find that for the past three years this was 144, which would make the population 33,762. Another method is to obtain the number of inhabited houses, less lock-up shops, in the middle of 1903, from the rate books, and multiply this by the average number of persons found to be inhabiting each house at the census in 1901. This I have done and find that the number of houses then inhabited was 6,762; multiplying this figure by 5 we get a population of 33,810.

In preparing the various rates for the year, I am taking 33,800 as the estimated population.

AREA.—The area of the Borough is 3,879 acres, and the average number of persons per acre is 8·7.

It is necessary in preparing statistics and comparing the various death rates of Torquay with those of the whole country, to consider the age and sex distribution of the population. The population of a district, in which the proportions of males to females or of young persons to old persons are different to those of the country generally, will suffer more than the whole country from the diseases which particularly affect persons of the age and sex which predominate in the district. In order to ensure a just comparison between the death-rate of such a district and the country as a whole, it is necessary to raise or lower the gross death-rates of the district to what they would be if the proportions of the local population in respect of age and sex were the same as those in the country generally.

To eliminate the error due to age and sex distribution varying from that of the whole country, the number of males and females at each age-period for the district being known from the last census, and the mean annual death-rate for each age and sex given by the Registrar General for the 10 years, 1891-1900, calculate the number of deaths which should take place in each class, if the local death rates were the same as those for the whole country.

The sum of the calculated deaths for all ages give "standard death rate" as the actual number gives the recorded rates, and dividing the mean death rate for the whole count the standard death rate for the local population, we obtain a factor. Multiplying the recorded rate by this factor, we obtain the corrected death rate for the district.

I have made the calculations for Torquay as is shown following table :—

Ages.	Mean annual death rate for England and Wales, corrected for age constitution for years 1891-1900.		Population of Torquay. Census 1901.		Calculated number Deaths.	
	Males.	Females.	Males.	Females.	Males.	Females.
under 1 year	62·7	52·8	259	250	16·239	13·250
5	4·3	4·4	2397	2396	10·307	10·598
10	2·4	2·6	834	934	2·001	2·440
15	3·8	3·7	822	953	3·123	3·524
20	5·1	4·5	1220	1982	6·222	8·967
25	6·8	6·1	1716	3625	11·668	22·111
35	11·5	9·6	1793	3059	20·619	29·404
45	19·0	14·8	1542	2563	29·298	37·910
55	35·0	28·5	1232	1998	43·120	56·543
65	70·4	60·7	939	1456	66·705	88·079
75	146·1	130·6	467	824	68·228	107·896
85 & upwards	286·8	261·4	118	246	33·842	64·700
	19·2	17·0	13,339	20,286	311·372	444·079

That is 756·637 deaths in a population of 33,625, or a standard death rate of 22·50.

The annual death rate for England and Wales for 1891 was 18·10 ; then $\frac{18·10}{22·50} = \cdot 8044$. Therefore ·8044 is the factor by which death rates for Torquay require to be multiplied to give rates corrected for age and sex distribution.

PHYSICAL FEATURES AND GENERAL CHARACTER OF THE DISTRICT.

These are of a highly diversified character, especially the central portions forming the Torquay promontory. In this district the two principal heights are the Warberry, 448 feet, and the Lincombe Hills, 372 feet, forming long ridges running N.E. and S.W., which are composed of the Lower Devonian grits and slates. The lesser heights, such as the Braddons, Waldon Park, and Chapel Hill, are formed of Middle Devonian limestone, which rests above the grits and slates mentioned.

On each side of this central area, viz., at St. Mary-Church and Chelston, rocks higher in the Geological Scale for the most part prevail. These rocks belong to the Permian formation, and consist of beds of Breccia—a kind of conglomerate—and sandstones of a deep red colour, owing to the presence of peroxide of iron.

There is very little clay in any portion of the area, and what does occur is of the nature of marl, and is confined to the lower levels of certain valleys or depressions, so that rain is not detained on the surface, as it rapidly disappears through these rather pervious rocks and soils.

BIRTHS.

During the year 536 births were registered, 252 being males, and 284 females. The average number of births for the previous eight years was 598. The birth rate for the year is therefore equal to 15·8 per 1,000 of the population. This is a very low rate, but in comparing this with other districts or the whole country, one has to bear in mind the peculiar constitution of the Torquay population, containing as it does a higher proportion of persons at the more advanced periods of life than obtains in the population of the country as a whole.

DEATHS.

The total number of deaths registered during the year was 455, of whom 66 were persons staying temporarily in the district. This would give a gross death rate of 13·4 per 1,000. If it was permissible to eliminate these 66 deaths of visitors, we should get a death rate of 11·5 per 1,000 of the resident population. The Local Government Board, however, only permit us to classify as *non-residents* those visitors dying in hospitals and public institutions. These numbered 28 during the year.

In order to obtain the corrected death-rate, it is necessary to subtract from the total of 455 these 28 deaths of non-residents and add the deaths of 20 persons belonging to the town, who died in the Newton Abbot Workhouse, and the deaths of one resident who died in the Borough Sanatorium, situated in the Newton Abbot Rural District. The corrected death-rate for the Borough is therefore 13·3 per 1,000. But in order to render this rate comparable with that for England and Wales, it is necessary to correct it for age and sex distribution. When this is done we get a rate of 10·7, which is extremely low, showing that the past year has been a remarkably healthy one. The death rate for England and Wales for 1903 was 15·4 per 1,000, that for the 76 great towns 16·3, and that for the 103 smaller towns 14·6.

The rate of 13·3 is the lowest recorded during the past eight years (the period during which records are obtainable for the enlarged Borough), although in Table I. it will be noticed that rates of 12·5 and 12·8 are given as corrected rates for the years 1897 and 1900 respectively, in these years apparently the deaths of all visitors have been eliminated, and no record given of the deaths of residents in the Newton Abbot Workhouse.

During the year 18 inquests were held.

There were 5 deaths uncertified.

DEATHS AT VARIOUS AGES.

Of the 448 deaths registered

55 occurred in children under 1 year of age	12·28 per cent.
16 between the ages 1 to 5	3·57 "
179 " " 5 to 65	39·95 "
198 in persons over 65	44·20 "
448	100·00 "

INFANTILE MORTALITY.

The total deaths under one year registered in the district was 51, but to this must be added 4 deaths of infants which occurred in Newton Abbot Workhouse. As there were 536 births during the year, the infantile mortality is equal to 102 per 1,000 births, as compared with 155 in 1902, or 142 the average for the past 8 years.

This is a very satisfactory figure, and is the lowest yet recorded. The infantile mortality in England and Wales during 1903 was 135 per 1,000 births, that of the 76 great towns 141, and that of the 103 smaller towns 135.

The following table gives the cause of death among infants for the past four years :—

	1903.	1902.	1901.	1900.
Measles	0	1	5	1
Whooping-cough	3	7	0	1
Influenza	0	0	1	0
Diarrhoea	3	3	1	11
Enteritis	3	3	2	3
Septic Diseases	1	0	0	0
Phthisis	0	1	2	1
Other Tubercular Diseases	1	4	2	1
Bronchitis	6	12	8	6
Pneumonia	1	4	2	7
Premature Birth	8	15	19	15
Heart Disease	2	0	1	0
Accidents	2	3	1	1
All other causes	25	37	26	23
Totals	55	91	70	70

From the above figures it will be seen how continuously free the town is from Diarrhoea deaths, that great cause of mortality among infants in all large towns.

CAUSES OF DEATH.

In table II. at the end of this report will be found a full classification of the causes of death.

PHTHISIS AND TUBERCULAR DISEASES.

The number of deaths registered as due to this disease was 57, of whom 26 were visitors. As 20 of these visitors died in public institutions, they may be deducted from the total, leaving 37, which gives a death rate of 1·10 per 1,000 from this disease. The rates for the past four years are as follows :—

1903.	1902.	1901.	1900.
1·10	1·42	2·02	1·90

There were 5 deaths due to other forms of Tubercular disease. When deaths occur from Phthisis in private houses, a notice is forwarded to the householder, offering to fumigate the rooms with

formalin, free of cost. In only a small percentage of the cases is the offer accepted. This is to be regretted ; I believe that a word from the medical attendant advising such fumigation, would have more effect than any number of notices.

CANCER MALIGNANT DISEASE, ETC.

During the year 47 deaths were attributed to these diseases, in 1902 there were 35, and in 1901, 44. Nine of the 47 deaths were those of visitors.

That cancer throughout the country is on the increase there can be little doubt. The Registrar General, in his last annual report, stated : "The deaths referred to cancer or malignant disease in the year 1901 numbered 27,487, and were more than the corrected average number recorded in the preceding ten years by 2,784."

It must be borne in mind that in a health resort such as Torquay cancer patients are frequently sent here, in the hope that the mild climate and bright sunshine may possibly prolong their lives. This materially increases the death-rate from this disease. Again, as I previously stated, no conclusion of any value can be deduced from a bare comparison between the death-rates of two populations very differently constituted as to age and sex. In a community such as Torquay, where the number of persons at advanced ages and of females is greater than that pertaining to the country as a whole, we expect to find a greater number of persons dying from cancer.

Deducting the nine deaths of visitors, we get a cancer death-rate of 1·12 per 1,000 of the resident population. If this figure is corrected for age and sex distribution, it would only be ·88 per 1,000 of the population. The rate for England and Wales for 1901, the only figures at present published, is ·84 per 1,000 of the total population.

AGE AND SEX DISTRIBUTION OF CANCER DEATHS.

	35-45	45-55	55-65	65-75	over 75	Totals
Males	3	3	4	9	0	19
Females	1	7	9	5	6	28
Total	4	10	13	14	6	47

In the following table the chief headings under which deaths from cancer occur are given :—

REGISTERED DEATHS FROM CANCER (MALIGNANT DISEASE),

Seat of Disease.	Sarcoma.		Carcinoma.		Malignant Disease or Cancer.		Total.
	M.	F.	M.	F.	M.	F.	
Neck, Throat, Tonsils, Larynx ..	1	—	1	—	—	—	2
Oesophagus	—	—	2	—	—	—	2
Breast	—	—	—	3	—	2	5
Stomach and Pylorus ..	1	—	2	2	5	2	12
Liver and Gall Bladder ..	—	—	3	1	1	4	9
Pancreas'	—	—	—	—	1	—	1
Intestines (excluding Rectum) ..	—	—	1	2	—	2	5
Rectum	—	—	1	—	—	3	4
Uterus	—	—	—	2	—	2	4
Arm, Wrist, Hand	—	1	—	—	—	—	1
Parts unspecified	—	—	—	—	—	2	2
Totals	2	1	10	10	7	17	47

NOTIFIABLE ZYMOTIC DISEASES.

During the year 54 cases of infectious disease were notified ; 5 were cases of chicken-pox which was notifiable for the first quarter of the year. In 1902, 70 cases were notified, 33 of these

were chicken-pox ; and in 1901, 89 were notified. The following table gives the notifications during each month of 1903 :—

	Small-pox.	Diphtheria and Membranous Croup.	Enteric Fever.	Puerperal Fever.	Scarlet Fever.	Erysipelas.	Chicken-pox	Total.
January ..	—	1	1	—	1	—	2	5
February ..	—	2	—	—	1	1	3	7
March ..	—	1	—	—	1	—	—	2
April ..	—	1	—	—	2	—	—	3
May ..	—	—	1	—	1	—	—	2
June ..	—	—	2	—	3	—	—	5
July ..	—	—	1	—	5	—	—	6
August ..	2	2	1	—	1	—	—	6
September ..	—	—	2	1	2	—	—	5
October ..	—	2	1	—	4	1	—	8
November ..	—	4	—	—	—	—	—	4
December ..	—	—	—	—	—	1	—	1
Totals ..	2	13	9	1	21	3	5	54

In Table III. of the Local Government Board returns on page 32, details are given as to the age of patients, the number of cases occurring in each ward, and the numbers removed to the Sanatorium.

From this table we find that 29 cases out of 54 were removed to Hospital, equal to 53 per cent.

Small-pox ...	2	to Cockington Sanatorium
Diphtheria ...	7	„ Sanatorium, Newton Road.
Scarlet Fever ...	15	„ „ „
Enteric Fever ...	4	„ Torbay Hospital. „
Puerperal Fever	1	„ „
Total ...	29	

SMALL-POX.

In August a case of small-pox was notified. I visited the case with the medical attendant, and there being no doubt as to the nature of the disease, I at once communicated with the Mayor, the Chairman of the Sanitary Committee, and the Town Clerk.

After consultation, it was decided to prepare the Sanatorium at Cockington for the patient's reception. With the assistance of the Borough Surveyor this was quickly done, and the patient removed the same afternoon. Dr. Cook, the Public Vaccinator, was informed of the case, and all the inmates of the house were at once re-vaccinated, as were several other persons who had been in contact with the patient.

The case was undoubtedly imported from London, the patient coming to Torquay for a holiday with his wife. He was ill on his arrival, and within the week the rash was fully developed. His wife, although re-vaccinated when her husband was removed, took the disease in a modified form ten days later, and was removed to the Sanatorium.

The infected rooms and bedding, etc., were thoroughly disinfected, and the "contacts" kept under observation for three weeks. By these precautions the disease was quickly stamped out.

The above facts demonstrate the absolute necessity of having isolation accommodation ready for the reception of small-pox cases, especially in a health resort such as Torquay, where the introduction of such a disease is not unlikely, and the consequence of an epidemic would be disastrous.

VACCINATION.

Through the courtesy of Mr. Edwards, the Vaccination Officer, I am able to give the results of primary vaccination for the years from 1897 to 1902. It is very satisfactory to note the large percentage of children protected from this loathsome disease.

Year.	Total births registered	Successfully vaccinated	Unsusceptible of Vaccination	Had Small-pox	Number of Certificates from Conscientious Objectors	Died Unvaccinated	Postponed by Medical Officer	Removed to other districts the Vaccination Officer of which has been apprised	Removed Address unknown	Percentage successfully Vaccinated	Excluding those who died Unvaccinated. Percentage
1897	683	581	2	—	—	59	—	4	20	85	93
1898	664	544	2	—	10	64	6	7	25	82	90
1899	612	505	6	—	14	67	6	3	11	83	93
1900	596	502	1	—	15	47	7	3	21	84	91
1901	597	491	2	—	16	57	13	1	17	82	91
1902	579	475	2	—	7	61	7	6	6	82	92

DIPHTHERIA.

Thirteen cases of this disease were notified during the year, two of which proved fatal. From the table giving the monthly notifications, it will be seen that the cases occurred in the spring and autumn months. Six out of the nine wards were affected, showing that there was no special localisation of the disease.

SCARLET FEVER.

Twenty-one cases were notified, and were all of a mild character, no deaths being registered. Fifteen were removed to the Sanatorium.

ENTERIC FEVER.

Nine cases occurred in the district, and two died, a case mortality of 22 per cent., and a death rate of '06 per 1,000 on the total population. Four of the patients were removed to the hospital. In five cases the disease was most probably contracted outside the district, the patients having been away for some time and only returning a few days prior to the onset of the disease. In four houses drainage defects were found, and two cases were undoubtedly due to eating cockles.

As we invariably get cases of enteric each year, through the consumption of sewage polluted shellfish, a notice, warning inhabitants to abstain from eating such shellfish, was printed and posted throughout the district early during the past summer.

CHICKEN-POX.

This disease was compulsory notifiable for the first three months of the year. Five cases occurred.

ERYSIPELAS.

Three cases were notified and there were no deaths.

PUERPERAL FEVER.

Only one case was notified, and this unfortunately proved fatal. Up till now the Sanitary Authority have had no legal authority over midwives who have attended such cases. However,

under the new Midwives' Act, the Council have taken over the local administration of the Act, and will have power to prevent the attendance of midwives, who are attending patients suffering from this disease, from going to other cases until they are satisfied that she is free from infection. All women practising as midwives must also be registered.

STEPS TAKEN TO PREVENT THE SPREAD OF INFECTIOUS DISEASE.

On the receipt of the notification, the house is visited as soon as possible, particulars as to source of infection, milk supply, school attended, drainage, etc., obtained, and if necessary arrangements made for the removal of the patient to the Sanatorium. Frequently the Medical Attendant notifies that the case is one suitable for treatment in the Sanatorium, a step which greatly facilitates their early removal.

After removal, or on recovery should the patient be isolated at home, the infected rooms and bedding are fumigated with formaline.

I am glad to be in a position to state that the Council have decided to purchase a modern steam disinfecter, and have applied to the Local Government Board for sanction to borrow the money for this purpose.

Where it is found that children in an infected house are attending one of the public elementary schools, the Attendance Officer is notified of the case. All cases suspected to be infectious by the School Attendance Officer, and where no doctor is in attendance, are notified to me as Medical Officer to the Education Authority.

NON-NOTIFIABLE ZYMOTIC DISEASES.

MEASLES.

The Town has been practically free from this disease throughout the year.

WHOOPING COUGH.

Many cases of this disease were known of in November and December of 1902. It was apparently on the increase during January and February, 1903, and in the latter month it was found necessary to close the Babbacombe Infant School. Five deaths were caused by whooping cough, all being children under five years of age.

INFLUENZA.

Influenza was responsible for eight deaths, all of persons over 65 years of age.

DIARRHŒA.

Only three deaths were due to this disease ; in 1902 there were four ; and in 1901 two. As pointed out when dealing with infant deaths, the Borough is singularly free from this disease. On examining the causes of death for past years, I find that in 1900 there were 13 deaths due to diarrhœa. What was the cause of this unusual mortality ? An examination of the meteorological returns for that year shows that July was a particularly dry month, and it is further stated in those returns, that the months of August, September, and October were abnormally dry, the rainfall being about half the usual amount. Many Medical Officers of Health, in their reports for 1902, state that the large decrease in their diarrhœa deaths was due to the wet summer. Dr. Newsholme, Medical Officer for Brighton, states : " Much of our relative immunity from diarrhœa was doubtless caused by the fact that each week throughout the summer there was more or less fall of rain." As a practical lesson from this, he advises the thorough flushing of streets, especially the gutters, when the natural scavenging of rain fails.

ZYMOTIC DEATH RATE.

There were 12 deaths ascribed to zymotic diseases, as compared with 18 in 1902, and 31 in 1901. They were as follows :—
Small pox 0, scarlet fever 0, diphtheria 2, fevers, including enteric, 2, measles 0, whooping cough 5, diarrhœa 3 ; total 12.

The zymotic death rate is equal to '35 per 1,000 of the population.

NINETEENTH ANNUAL REPORT on THE SANATORIUM.

For the Year ending March 31st, 1903.

TO THE CHAIRMAN & MEMBERS OF THE SANITARY COMMITTEE.

GENTLEMEN,

On the 1st of April, 1902, there were no patients under treatment, and from that date to March 31st, 1903, twenty-six patients were admitted. These patients remained under treatment a period of 1,242 days, giving an average stay in hospital of 48 days each.

There were 16 cases of scarlet fever, two diphtheria, six measles, one German measles, and one mumps.

Three of the above patients were visitors, two of whom were admitted to private wards; nine were from H.M.'s ships, two were shop assistants; while the remaining twelve patients came from the homes of the working classes.

Only one death occurred, and this was a patient suffering from diphtheria, who died a few hours after admission.

The following table shows the cost of working during the 12 months :—

1903.	EXPENDITURE.	£	s.	d.
Diet of Patients	...	...	90	9 0
Wages and Diet of Nurses	...	...	121	12 6
Laundress	...	...	57	4 0
Curator	...	...	64	15 0
Surveyor's Account	...	...	12	6 8
Tradesmen's Accounts	...	...	46	9 11
Rent, Rates and Insurance	...	...	67	12 7*
Drugs	...	...	10	12 5
Medical Fees	...	...	5	5 0
Conveyance of Patients	...	...	6	18 0
Coal, Coke and Wood	...	...	73	12 4
Rent of Telephone	...	...	10	0 0
Fire Appliances	...	...	3	15 0
			<u>£570</u>	<u>12 5</u>
	RECEIPTS.	£	s.	d.
Paid by Patients	...	...	184	8 3
Deficit	...	...	386	4 2
			<u>£570</u>	<u>12 5</u>

These figures should be compared with those of previous years:—

1898 Report ...	30	Patients cost ..	493	13	2	...	Deficit	463	19	2
1899 ..	35	.. ..	513	14	11	...	..	496	18	11
1900 ..	42	.. ..	564	2	10	...	..	519	8	10
1901 ..	26	.. ..	515	15	11	...	..	402	18	11
1902 ..	58	.. ..	903	6	6	...	..	880	14	6
1903 ..	26	.. ..	570	12	5	...	..	386	4	2

* NOTE.—£48 10s. 10d. of the above is the rent, etc., paid for Cockington Sanatorium.

I am, Gentlemen,

Your obedient servant,

T. DUNLOP,

August, 1903.

Medical Officer of Health.

WATER SUPPLY.

The water supply of Torquay is derived from upland surface, gathering ground about 15 miles from Torquay, on the borders of Dartmoor. The area of the gathering ground is about 2,241 acres, and is composed of:—

						Acres.
Moorland	..	..	..	..	..	584
Woods.. ..	..	..	..	..	..	75
Woods (new)	..	..	..	..	..	30
Land within zone	..	..	..	..	..	350
Land under cultivation.. ..	..	..	..	..	..	212
Grazing	..	..	..	..	..	990
Total						2241

By the powers conferred on them by an Act of Parliament in 1896-7, the Corporation have purchased the whole watershed, freeing the area from all inhabited houses and taking other steps which render the possibility of contamination of the water almost impossible.

At the present time the water is stored in two large reservoirs, the Tottiford Reservoir containing 103,000,000 gallons, and the Kennick Reservoir 194,000,000 gallons.

The supply is augmented by taking water from the Trenchford stream, the yearly average amount being 170,000,000 gallons. In order to reduce to a minimum the possibility of there being any shortage of water in very dry seasons, the Corporation applied for

and obtained an Act of Parliament enabling them to build another reservoir, in the Trenchford Valley, impounding the waters of the Trenchford stream. This reservoir will be capable of containing 200,000,000 gallons.

The average amount of water supplied per head per day during the past year was found to be 35·55 galls. for all purposes.

As to the quality of the water, I cannot do better than quote from the opinion of Professor Percy Frankland, given in a report made in May, 1903, after visiting the gathering grounds and examining, chemically and bacteriologically, samples of the supply :
"A source of water supply, which in respect of freedom from suspicion ranks with the best upland surface supplies in the Kingdom. The water also contains such a small amount of lime and magnesia salts that it possesses all the well-known advantages of very soft water, whilst its slightly alkaline reaction prevents it from having any solvent power on lead."

Appended is Professor Frankland's report :—

Report on an Inspection of the Gathering Ground and Reservoirs of the Torquay Corporation, and on the Results of Chemical and Bacteriological Examination of Samples of Water supplied, by
PROF. PERCY FRANKLAND, F.R.S.

THE UNIVERSITY, BIRMINGHAM,

11th May, 1903.

THE TOWN CLERK,
 TORQUAY.

DEAR SIR,

I have to report to you on the inspection which I have made of the gathering ground and reservoirs from which the Torquay Water Supply is derived, as well as on the chemical analysis and bacteriological examination of the several samples of water, which I personally collected on the 25th ult. I was already, to some extent, acquainted with the supply, having made chemical analyses of certain representative samples of water from Torquay in 1893, and also analyses and bacteriological examinations of some further samples in 1898.

The history of the Torquay Water Supply is a particularly interesting one, going back as it does to the year 1856. At that time it was quite usual to abstract for waterworks purposes the water of streams passing through land under cultivation and supporting a larger or smaller number of farms and other habitations. Such a source was taken for the supply of Torquay nearly half a century ago.

With the progress of sanitary science, which was such a conspicuous feature of the latter half of the nineteenth century, it became more and more fully realised that water liable to be polluted with the drainage and other refuse from human habitations is capable of communicating Zymotic disease, and is unfit, without most careful purification, for domestic supply.

Under these circumstances it became necessary for communities possessing supplies of the above suspicious character to adopt one of the two different courses in order to secure water complying with the modern standards of purity.

(1) The first course consists in changing the source by removing to an unpopulated or almost unpopulated gathering ground.

(2) The second course consists in purchasing the existing gathering ground, and removing all habitations and other sources of pollution.

It was for this latter drastic measure, selected by the Corporation of Torquay, that the sanction of Parliament was obtained in the Act of 1896-7.

This Act has enabled the Corporation to acquire an estate of 2,241 acres, which, by the abolition of every habitation within the watershed, has been converted into a magnificent gathering ground in which a number of springs come to the surface, and give rise to two principal streams, the Trenchford and Kennick Brooks.

On the occasion of my visit I was able to see the great improvements which have been made in protecting the water derived from this area since it came into the hands of the Corporation.

I saw several of the sites formerly occupied by farmhouses which must have been in dangerous proximity to the streams; also the fences which have been erected to prevent cattle from approaching the water courses, as well as the trenches which have been dug to prevent the water running off the surface of the land from flowing directly into the streams. Finally, owing to the entire watershed being now under the complete control of the Corporation, the land under cultivation can be restricted to outlying portions, and the use of objectionable fertilizers prevented.

I am of opinion that these improvements have been carried out on a well-conceived plan, and that they are calculated to preserve the purity of the water furnished by the gathering ground.

EXAMINATION OF SAMPLES.

I have examined, both chemically and bacteriologically, representative samples of water taken in the Trenchford and the Kennick valleys respectively, as well as a sample of the water actually supplied in the town of Torquay itself.

TRENCHFORD VALLEY.—In this valley I collected two samples, one near the source of the stream, where the latter passes over a small fall a few feet in height, and another at the bottom of the valley, where the stream passes over the gauge-weir just above the "intake."

The sample taken at the source was colourless, only very slightly turbid, and of an extremely high degree of organic purity; in fact, it is essentially spring water as regards its chemical composition, although in consequence of its having passed over the surface of the ground it contains more bacterial life than is found in typical spring water issuing directly from a water-bearing stratum.

The sample taken from the Gauge was also only very slightly turbid, but contained, as was to be expected, a little more organic matter than that from the source, although the actual amount is so small that the water is still of a high degree of organic purity, and possesses practically the composition of spring water. It is bacteriologically of essentially the same quality as the previous sample. Thus the water of the Trenchford Brook undergoes but little change during its course from the source to the Gauge.

At present the water of the Trenchford Brook passes on directly to the service reservoirs for supply, but the proposed interposition of a storage reservoir, for which powers are being sought in the present session of Parliament, will be a most valuable addition to this portion of the supply. By storage in such a reservoir the amount of bacterial life in the Trenchford Brook will doubtless be considerably reduced.

KENICK VALLEY.—At the head of this valley the springs discharge over the surface of the ground in such a thin layer that I was not able to obtain a sample until a distinct brook has been formed near what used to be Blackingstone Farm. This sample was slightly turbid, pale yellow, and contained more than twice as much organic matter as was present in the Trenchford Brook at the Gauge. This water partakes more of the character of moorland water, and is of a somewhat peaty nature. For moorland water the amount of organic matter is, however, by no means large.

The amount of bacterial life is also greater than in the Trenchford Brook, and the nature of the bacteria indicates that the water has been more in contact with the surface soil.

A sample collected from a boat at the foot of the Kennick Reservoir, although, chemically, almost identical with that taken from the Kennick Brook at Blackingstone Farm, contained much less bacterial life, the number of bacteria being considerably smaller than that present in the Trenchford Brook, and thus affording a striking illustration of the great bacterial improvement which is effected by storage in a large reservoir.

Another sample, similarly collected from a boat near the dam of the Tottiford Reservoir, was of a very pale yellow colour, and contained slightly more organic matter than the sample from the Kennick Brook at Blackingstone Farm; it was, however, only very slightly turbid, and of a very high degree of bacterial purity. This sample thus affords a further and still more striking illustration of the bacterial improvement which is effected in water by long-continued storage.

WATER SUPPLIED TO TORQUAY.—The water actually supplied to Torquay is a mixture of the water from the Trenchford Brook and of that from the Tottiford Reservoir, and the sample collected at the Town Hall exhibited a composition which was, both from a chemical and bacteriological point of view, intermediate in character between that of the samples from these two sources respectively. It was only very slightly turbid, of a very pale yellow colour, and contained only a very moderate amount both of organic matter and of bacterial life. The removal of all habitations from the watershed, and the other improvements made on the gathering ground, since its acquisition by the Corporation, have thus guaranteed to Torquay a source of water supply which, in respect of freedom from suspicion, ranks with the best upland surface supplies in the kingdom. The watershed is, moreover, favoured by nature in yielding a large quantity of spring water in the Trenchford Valley, whilst, owing to the relatively small area of peat, the entire supply from both valleys contains for upland surface water only a very moderate proportion of vegetable organic matter. The water also contains such a small amount of lime and magnesia salts that it possesses all the well-known advantages of very soft water, whilst its slightly alkaline reaction prevents it from having any solvent power on lead.

I am, Sir,

Faithfully yours,

PERCY F. FRANKLAND.

RESULTS OF ANALYSIS EXPRESSED IN PARTS PER 100,000.

Number of Sample.	Description.	Total Solid Matters.	Organic Carbon.	Organic Nitrogen.	Ammonia.	Nitrogen as Nitrates and Nitrites.	Total Combined Nitrogen.	Chlorine.	Hardness.			Remarks.
									Temp.	Perm.	Total.	
TORQUAY WATER SUPPLY. <i>April 25th, 1903.</i>												
12,851	Trenchford Source, 12.40 p.m.	6.36	.056	.008	Trace.	.206	.214	1.30	0.4	2.3	2.7	Very slightly turbid, palatable, free from poisonous metals and nitrites.
12,852	Trenchford Gauge, 3.10 p.m.	7.00	.094	.009	Trace.	.165	.174	1.47	0.2	2.5	2.7	Very slightly turbid, palatable, free from poisonous metals and nitrites.
12,853	Main Stream, near Blackingstone Farm, 1.40 p.m.	6.20	.212	.029	Trace.	.044	.073	1.35	0.3	2.0	2.3	Slightly turbid, very slight peaty taste, free from poisonous metals and nitrites.
12,854	Kennick Reservoir, 2.25 p.m.	6.40	.192	.028	Trace.	.095	.123	1.50	0.4	2.1	2.5	Very slightly turbid, very slight peaty taste, free from poisonous metals and nitrites.
12,855	Tottiford Reservoir, 2.55 p.m.	6.80	.236	.032	Trace.	.097	.129	1.45	0.5	2.1	2.6	Very slightly turbid, very slight peaty taste, free from poisonous metals and nitrites.
12,856	Town Hall, 8.25 a.m.	6.84	.141	.018	Trace.	.118	.136	1.50	0.3	2.2	2.5	Very slightly turbid, very slight peaty taste, free from poisonous metals.

PERCY F. FRANKLAND, Ph.D., M.Sc., LL.D., F.R.S.
May 11th, 1903.

Dr. PERCY FRANKLAND.

CHEMICAL DEPARTMENT,
UNIVERSITY,
BIRMINGHAM.

RESULTS OF BACTERIOLOGICAL EXAMINATION.

Number of Sample.	Description.	Number of Micro-organisms obtained from One Cubic Centimetre of Water.				Cultivation in Plain Broth.	Cultivation in Carbolio Broth.	Anaerobic Cultivation of Spores in Milk.	Remarks.
		Ordinary Culture.	Number of Days Incubated.	Carbolio Culture.	Number of Days Incubated.				
	TORQUAY WATER SUPPLY. <i>April 25th, 1903.</i>								
12,857	Trenchford Source, 12.40 p.m.	248 347	2 3	3 —	7 —	No Indol. ..	No Indol. ..	0	
12,858	Trenchford Gauge, 3.10 p.m.	228 520	2 5	0 —	7 —	Very faint Indol. ...	No Indol. ..	0	
12,859	Main Stream, near Blackingstone Farm, 1.40 p.m. ..	435 770	2 3	16 —	7 —	No Indol. ..	No Indol. ..	Coagulated (4 days)	
12,860	Kennick Reservoir, 2.25 p.m.	133 209	2 3	0 —	7 —	No Indol. ..	No Indol. ..	0	
12,861	Tottiford Reservoir, 2.55 p.m.	45 160	2 7	0 —	7 —	Very faint Indol. ...	Very faint Indol. ...	0	
12,862	Town Hall, 8.25 a.m. ...	218 410	2 5	1 —	7 —	No Indol. ...	No Indol. ..	0	

PERCY F. FRANKLAND, Ph.D., M.Sc., LL.D., F.R.S.

May 11th, 1903.

In order that the quality of the water may be constantly kept under observation, the Corporation have decided to fully equip a laboratory for the regular chemical analyses of the supply. The work is now well in hand, and in a few weeks should be ready for use.

MILK SUPPLY.

Much attention has, during the year, been drawn to the milk supply of large towns throughout the country, and if all that has been written is true, it is well that consumers of milk are ignorant of the facts.

It ought to be satisfactory to the inhabitants and visitors of Torquay to know that through the continued efforts of the late Medical Officer of Health, Dr. Karkeek, systematic inspections are made, not only of the registered cowsheds and dairies in the Borough, but of all the dairy farms outside the district which supply dealers in the town. The system is as follows :—Twice a year the Sanitary Inspectors make their routine inspections of the cowsheds and dairies in the Borough, obtaining from each dealer the names and addresses of the various farmers from whom they obtain their supply. Each farm outside the district is then visited by me and one of the inspectors, an inspection being made of everything connected with the production of milk. Particulars are obtained of the condition of the cowsheds as to cleanliness, lighting, ventilation, and paving ; the washing of milk vessels ; cleanliness of dairies, etc. ; the water supply as regards its freedom from possible pollution ; and the number and condition of the cows being milked.

After these inspections a complete register is compiled of all dairies and cowsheds in the Borough, together with the farms outside which supply them with milk, etc. This register is printed in the form of a bill, and is posted up throughout the town, copies being forwarded to all dairymen and farmers concerned. Such bills are a guarantee that we are satisfied with the sanitary state of the places inspected, and is in force for six months. Thus two thorough inspections are made each year. It is satisfactory to be able to report that the farmers meet us with every courtesy, and endeavour to carry out any improvements that are suggested. The dairies everywhere are beautifully kept, and there is a noticeable improvement in the condition of the cowsheds. Cowsheds, which in the past rarely saw the whitewash brush, are now limewashed twice a year ; cobble paving, which is almost impossible to keep clean, has in many places been replaced by brick paving. It must also

be remembered that in South Devon, for the greater part of the year, the cows are kept out night and day, only being brought in at night from the middle of December to the end of March, so that the animals live under the best conditions possible.

I do not think that sufficient care is exercised in the milking of the cows, and it is then that there is great liability to pollution, a fact which any farmer who has a milk separator can prove for himself by examining the sediment, which contains numerous hairs and other extraneous matter, which never came from the udder of a cow. It is very rare to see overalls or even aprons used by the milkers, except where women do the milking. Proper means for washing the hands are seldom seen. I am afraid in many cases the hands get nothing more than a rinse in the pump water, and sometimes not even that. It is in this direction that improvement is needed. I have recently read of a dairy farm in Yorkshire where all these precautions are strictly observed. Now this has not resulted in a monetary loss as some might expect, but in a daily increasing demand for milk from this farm, and the proprietor has been able to obtain a better price for his milk than other farmers near who do not adopt such precautions.

There are 87 registered dairymen and cow-keepers in the Borough which receive their milk from 62 farms situated outside the district.

SALE OF FOOD AND DRUGS ACT.

Samples are taken by the County Police. The following table is a summary of their action under the Act :—

Articles examined.	Number of samples taken	Result of Analysis.		Result of proceedings taken.
		No. genuine.	No. adulterated.	
Beer	12	12		
Brandy	5	5		
Bread	6	6		
Coffee	4	4		
Milk	19	18	1	Fined 5/- & 11/- costs
Rum	1	1		
Gin	7	7		
Tea	4	4		
Sugar	4	4		
Whisky	5	5		

FACTORY AND WORKSHOPS ACT.

By section 131 of this Act, the Local Authority is directed to keep a register of workshops situated in their district. During the year much time has been spent by the Sanitary Inspectors, not only in inspecting the workshops in their areas, but in measuring up the various rooms, and obtaining other particulars for compiling the register. This has been completed, but owing to its cumbersome nature, and the necessity of erasures through changes of occupation and the nature of the work carried on, the card system as initiated by the Brighton Authority has been adopted, and has been found to be simple, complete, and easy to keep up to date.

The following table gives a summary of the various trades and the number of each :—

Description of Trade.	Number of Workshops.
Drapers, Dressmakers, Milliners	60
Cabinet Makers and Upholsterers	14
Coach-builder and Wheelwright, Cycle Works ...	18
Printers	5
Tailors	23
Laundries	36
Builders, Carpenters	16
Saddlers, Harness, and Sailmakers	10
Watch Maker and Jewellers	6
Plumbers, Painters, etc.	28
Bakehouses	54
Dye Works	1
Bootmakers	3
Corset Makers	1
Marble Masons	2
Picture Framers and Wood Turners	2
Photographers	1
Iron Founder	1
Quarries	5

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Many workshops besides those on the list supplied by H.M. Inspector of Factories have been added to the register, and I have no doubt there are others, which in the course of next year's inspection I hope will be visited.

OUTWORKERS.

Much trouble has been experienced in obtaining the lists of outworkers. By section 107 of the Act, manufacturers of wearing apparel and lace, occupiers of workshops for fur-pulling, cabinet making, furniture making and upholstery, electro-plate, and file making, must keep lists of all outworkers, and must furnish the

Local Authority with such lists before the 1st of February and the 1st of August in each year. Circular letters have been sent to those persons supposed to employ outworkers, and recently large bills were posted up drawing attention to the above section, and yet with little effect. In future, occupiers who neglect to furnish lists are to be reported to the Sanitary Committee.

BAKEHOUSES.

There are 54 bakehouses on the register. During the year I made an inspection of each; only two were found which could be said to come under the definition of underground bakehouses. In one case it was found impossible to make such alterations as to render it suitable for a certificate. It was therefore closed and another bakehouse obtained. The other, on complying with certain suggestions, has been granted a certificate. Several of the bakehouses had traps inside directly connected to the drain or sewer; these have in all cases been disconnected. Defective floors were found in some places, while others required limewashing. The defects have been remedied in every case.

Many visits and re-visits were made by the Inspectors during the course of remedying defects found in the workshops, and are dealt with by them in their reports.

ICE CREAM TRADE.

As far as I could ascertain, there are only two manufacturers of ice cream in the town. I inspected both. In one, everything possible appeared to be done to insure the purity of the ice cream, the other was satisfactory.

COMMON LODGING-HOUSES.

There are three registered common lodging-houses. I visited these, and found two very clean and well looked after; the third required limewashing, and was not as clean as it should be.

FRENCH ONION HAWKERS.

Early in the autumn of each year gangs of these hawkers come to Torquay with cargoes of onions, making the town their headquarters, and hawking their goods for miles into the country. They stay until they have disposed of all their onions. As they all live together, occupying large lofts, it is necessary to keep them

under observation to prevent overcrowding. This year, with Mr. Watson, I paid a midnight visit on a Saturday night, so as to find the greatest number present, as those on country rounds usually return for Sunday. We visited the three gangs, and in only one instance detected overcrowding, and that was where a portion of the gang slept in a cottage. This overcrowding was at once abated.

HOUSING OF THE WORKING CLASSES.

From an examination of the details given in the census returns for 1901, and there is little reason to believe there has been any material change since then, we find that the number of tenements (*i.e.*, houses or parts of houses separately occupied) was 7,616; of these 2,324, had less than five rooms. The following table gives the number of rooms in each tenement, and the number of occupants to each tenement:—

Tenements.	No. of Tenements.	Number of Occupants to each Tenement.											
		1	2	3	4	5	6	7	8	9	10	11	12 or more.
1 roomed	186	137	40	9	—	—	—	—	—	—	—	—	—
2 roomed	545	155	210	100	49	21	10	—	—	—	—	—	—
3 roomed	767	61	218	190	102	104	45	27	15	3	1	1	—
4 roomed	826	42	171	195	176	93	63	46	24	14	—	—	2
Totals	2324	395	639	575	327	218	118	73	39	17	1	1	2

On the whole there appears to be little evidence of overcrowding. It is noticeable that the size of the rooms, in what may be termed exclusively tenement houses in Torquay, is greater than is usually found in many other districts.

SLAUGHTER HOUSES.

There are seven licensed slaughter houses in the Borough—six are in the St. Mary-Church District, and one belonging to a company in Upton; this is a large one, and is used by a number of butchers.

I have inspected them all and had no complaint to make as to their condition.

OFFENSIVE TRADES.

The only one in the district is that of a tripe-boiler. On my inspection I found it clean and suitable for the purpose.

COLLECTION AND DISPOSAL OF REFUSE.

House refuse is removed by the employees of the Corporation, under the Surveyor's Department. In most parts of the town it is removed once a week, but in certain parts twice. It is carted to the destructor works in Upton Valley, and there consumed, about 12,000 tons being dealt with annually. The destructor is a "Warner Perfectus" of four cells. The boilers are heated from the furnaces, and the steam generated can be used to drive donkey-engine, vertical engine for running blower, 25-horse power engine for running mortar mill and electrical installation. The clinker produced is ground and used for mortar; for this there is a good demand.

DRAINAGE.

The sewage of the whole district and most of the storm water is conveyed by branch sewers to the 7ft. main sewer, which runs from Fleet Street to Hope's Nose, a distance of almost two miles. Here the sewage is discharged untreated into the sea. The natural set of the current is out towards mid-channel beyond Berry Head.

A portion of the tile sewer in the St. Mary-Church Road has been relaid with stoneware pipes. An application has also been made to the Local Government Board for sanction to borrow money for re-laying the main sewer through Hele, and for laying certain sewers in Babbacombe Road, to relieve the present sewers in time of heavy rain, and thus prevent flooding of houses in this district.

HOUSE DRAINAGE.

During the past year the drainage, etc., of 43 houses has been examined for intending occupiers, on payment of the 10s. fee, prior to granting a sanitary certificate. In 23 other places where, on complaint, drainage defects were found, and where the owner, in remedying them, complied with the requirements necessary to obtain a certificate, the same were granted.

TABLE I.
VITAL STATISTICS OF WHOLE DISTRICT DURING 1903 AND PREVIOUS YEARS.

Year.	Population estimated to Middle of each Year.	Births.		Total Deaths Registered in the District.			Deaths of Non-Residents registered in Public Institutions in the District.		Deaths of Residents registered in Public Institutions beyond the District.		NETT DEATHS AT ALL AGES BELONGING TO THE DISTRICT.	
		Number.	Rate.*	Under 1 year of age		At all ages.	Number.	Rate.*	10	11	Number.	Rate.*
				Number.	Rate per 1,000 Births registered.							
1	2	3	4	5	6	7	8	9	10	11	12	13
1895.	33100	652	19.6	102	155	583	17.6	41	55		528	15.9
1896.	33200	650	19.5	107	163	569	17.1	43	41		528	15.9
1897.	33300	630	18.9	81	128	502	15.0	43	83		419	12.5
1898.	33400	626	18.7	83	132	529	15.5	53	70		459	13.7
1899.	33500	573	17.0	84	143	570	17.0	31	49		529	15.5
1900.	33600	559	16.6	70	124	488	14.5	41	58		430	12.8
1901.	33625	556	16.5	70	125	504	15.0	51	28		476	14.1
1902.	33625	540	16.0	84	155	529	15.7	63	38		491	14.6
Average for years 1895-1902.	33420	598	17.8	85	142	534	15.9	45	52		482	14.4
1903.	33800	536	15.9	51	95	455	13.4	57	28	21	448	13.3

* Rates in columns 4, 8, and 13 calculated per 1,000 of estimated population.

NOTE.—The deaths to be included in Column 7 of this table are the whole of those registered during the year as having actually occurred within the district or division. The deaths to be included in Column 12 are the number in Column 7, corrected by the subtraction of the number in Column 10 and the addition of the number in Column 11.

By the term "Non-residents" is meant persons brought into the district on account of sickness or infirmity, and dying in public institutions there; and by the term "Residents" is meant persons who have been taken out of the district on account of sickness or infirmity, and have died in public institutions elsewhere.

TABLE II.

CAUSES OF, AND AGES AT, DEATH DURING YEAR 1903.

CAUSES OF DEATH.	DEATHS IN OR BELONGING TO WHOLE DISTRICT AT SUBJOINED AGES.							Total Deaths in Public Institutions in the District.
	All ages.	under 1	1 and under 5	5 and under 15.	15 & under 25.	25 & under 65.	65 & up- wards	
Small-pox								
Measles								
Scarlet Fever								
Whooping-cough	5	3	2	—	—	—	—	—
Diphtheria and Membranous croup	2	—	1	—	1	—	—	—
Croup								
Fever { Typhus	2	—	—	—	1	1	—	1
{ Enteric								
{ Other continued								
Epidemic influenza	8	—	—	—	—	2	6	1
Cholera								
Plague								
Diarrhoea	3	3	—	—	—	—	—	—
Enteritis	8	3	3	—	—	1	1	—
Puerperal fever	1	—	—	—	1	—	—	1
Erysipelas								
Other septic diseases	3	1	—	—	—	1	1	1
Phthisis	37	—	1	2	6	24	4	21
Other tubercular diseases	5	1	1	—	1	1	1	3
Cancer, malignant disease	47	—	—	—	—	25	22	3
Bronchitis	35	6	1	—	—	8	20	1
Pneumonia	17	1	2	1	—	7	6	3
Pleurisy	2	—	—	—	—	—	2	—
Other diseases of respiratory organs	1	—	—	—	—	—	1	1
Alcoholism								
Cirrhosis of liver	7	—	—	—	—	6	1	2
Venereal diseases								
Premature birth	8	8	—	—	—	—	—	—
Diseases and accidents of parturition	1	—	—	—	—	1	—	—
Heart diseases	71	2	—	—	1	29	39	4
Accidents	7	2	2	—	—	3	—	3
Suicides	3	—	—	—	—	2	1	—
All other causes	175	25	3	2	2	50	93	13
All causes	844	55	16	5	13	161	198	57

TABLE III.
CASES OF INFECTIOUS DISEASE NOTIFIED DURING THE
YEAR 1903.

NOTIFIABLE DISEASE.	Cases notified in whole district.							Total cases notified in each locality.							No. of cases removed to hospital fr'm each locality.											
	At all ages.	At Ages—Years.						Torre	Waldon	Upton	Ellacombe	Strand	Torwood	S. Marych.	Babe'mbe	Chelston	Torre	Waldon	Upton	Ellacombe	Strand	Torwood	S. Marych.	Babe'mbe	Chelston	
		Under 1	1 to 5	5 to 15	15 to 25	25 to 65	65 and upwards																			
Small-pox ..	2	—	—	—	1	1	—	—	—	—	2	—	—	—	—	—	—	—	2	—	—	—	—	—	—	—
Cholera ..	—	—	—	—	—	—	—	1	3	—	2	2	3	—	—	—	1	2	—	1	2	—	1	—	—	
Diphtheria ..	13	—	1	4	5	3	—	1	3	—	2	2	3	—	—	—	1	2	—	1	2	—	1	—	—	
Membranous croup ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Erysipelas ..	3	—	—	—	—	3	—	1	—	1	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	
Scarlet fever ..	21	—	5	7	8	1	—	4	4	3	1	1	—	5	1	2	2	1	4	1	—	—	5	1	1	
Typhus fever ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Enteric fever ..	9	—	1	2	1	4	1	—	—	1	1	1	—	5	1	—	—	—	—	1	—	3	—	—	—	
Relapsing fever ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Continued fever ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Puerperal fever ..	1	—	—	—	1	—	—	—	—	—	—	1	—	—	—	—	—	—	—	1	—	—	—	—	—	
Plague ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Chicken Pox ..	5	—	4	1	—	—	—	—	—	—	5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Totals ..	54	—	11	14	16	12	1	6	7	5	11	5	2	14	2	2	3	3	4	4	4	—	9	1	1	

BOROUGH OF TORQUAY.

ANNUAL REPORT

OF

THE SANITARY INSPECTOR.

*To the Mayor, Aldermen, and Councillors of the Borough of
Torquay.*

GENTLEMEN,

I have the privilege of making to the Council, as the Urban Sanitary Authority, this my Twenty-Sixth Annual Report, viz., that for the year 1903.

It will not be found to vary much in detail from those of previous years, except in the important particular of the operations under the Factories and Workshops Act, which were more extensive than was anticipated, and therefore prevented the customary house-to-house inspection of a poor quarter of the town, which always formed an important part of the year's work.

HOUSE INSPECTION.

The main duty has, as usual, been the inspection of premises, either after complaint of insanitary condition, or at the request of owners or agents on re-letting or sale of houses. Twenty-four of these latter were dealt with, and nineteen others of a superior class were examined or tested after work had been done by the occupying owners.

Practically, these houses have undergone a thorough re-drainage, and putting in of improved sanitary fittings, the whole being submitted to the smoke or water tests during progress of the work and at completion, when satisfactory sanitary Reports or Certificates were granted.

In addition to these, eighty-one other houses of a smaller type were inspected, tested, and necessary improvements executed.

DETAILS OF OPERATIONS.

On analysing the record of the structural work done, I find that

- 56 New Sanitary Conveniences and Water supply were fixed.
- 62 „ Soil-pipes were fixed outside houses and ventilated.
- 103 Intercepting Traps, with fresh air inlets.
- 77 Inspection Chambers built in addition.
- 70 New Sets of House Drains were laid.
- 11 Old masonry drains were discovered and destroyed.
- 21 Yards or back premises were paved and drained.
- 10 Taps from main water pipes provided.
- 1 Cottage without sanitary conveniences condemned.
- 61 Supplies of Disinfectants were distributed.
- 17 Premises limewashed.
- 15 Ashbins or covers to manure pits supplied.
- 47 Offensive accumulations were removed.
- 7 Nuisances from keeping of animals abated.
- 39 Bedrooms, bedding, clothing, etc., were fumigated after cases of infectious and other diseases.

FUMIGATIONS.

An interesting circumstance in connection with these latter may be noted, as for the first time I have been requested to disinfect or fumigate after two cases of cancer, and some of whooping cough and measles, which are not notifiable diseases, as well as after six cases of phthisis. In only one instance was my offer declined, and that after at first consenting. I find a call in such cases more effectual than sending official forms offering these services.

SCHOOLS AND INSTITUTIONS.

The entire sanitary arrangements of two Elementary Schools were examined and tested, viz., Torre Parish School, and the Catholic School, Abbey Road, and proved sound and effective; also the School House of the latter was re-drained. I was requested by the authorities of two Charitable Institutions to act similarly with respect to the drains; I did so, but was unable to prove any defects, and I found the systems clear and in good working order. The number of smoke and other tests applied to all classes of buildings, old and new, for the year was two hundred and thirty-five.

NEW BUILDINGS.

The number of New Buildings erected or completed during the year was twenty-eight (or one more than in 1902), of which eight were in Chelston Ward. The principal erections were the fine Bank on Vaughan Parade for Lloyds' Company, and the mansion on the Pilmuir estate, both carried out thoroughly and in accordance with accepted sanitary principles and with the plans passed by the Council. There were also important additions to the Victoria and Albert Hotel ; the completion of the new aisle at the Church of the Assumption ; also of St. Matthew's Church, Chelston, by the erection of the Chancel and Tower.

I may remark with reference to "Pilmuir," that more than twenty visits for testing the drainage system in sections had to be made, there being probably a mile of the best stoneware pipes laid on the estate.

FACTORIES AND WORKSHOPS.

The work lately imposed on the Sanitary Department by the operation of the Factories and Workshops Act has taken up much time, no fewer than one hundred and eight being under my supervision. These have been classified under the following headings :—

- 26 Dressmakers and Milliners.
- 16 Plumbers and Painters.
- 8 Coach-builders and Cycle Works.
- 4 Cabinet-makers.
- 10 Tailors.
- 6 Laundries.
- 8 Builders and Carpenters.
- 4 Saddlers and Harness-maker and Sailmaker.
- 3 Printers.
- 4 Watchmakers and Jewellers. Also
- 19 Bakehouses.

The places are situate in the Torre, Waldon, and Chelston Wards, also in a part of the Strand Ward.

These have all been inspected as to their state of cleanliness and the condition of the sanitary arrangements ; also the cubic space measured where found necessary.

Improvements have been effected, chiefly in the matter of cleanliness, the occupiers being most willing to comply in this respect. Where structural alterations were needed there was more difficulty, but gradually the requisite work is being done.

MILKSHOPS AND DAIRIES.

The Milkshops and Dairies in the same Wards have likewise been visited, they were found clean and in creditable condition ; and the Cowsheds in Cockington (seven in number), outside the Borough boundaries, were inspected, and found to have been recently cleansed and limewashed on each occasion.

COMMON LODGING HOUSES.

Visits to the Common Lodging Houses were also made, with the exception of one of those in Pimlico ; on one occasion only could exception be taken, but the matter found fault with has since been rectified.

SPECIAL REPORT.

The special Report on Twenty-five Years' Sanitary Progress in Torquay, which the Council gave me sanction to prepare, was completed in March, and was printed, published, and circulated soon afterwards.

I thank the Council for the honour done me in this matter, and beg to remain,

Mr. Mayor and Gentlemen,

Yours obediently,

CHARLES MACMAHON.

*Cert. San. Inst. ; Assoc. M.B.I. Pub. Health ;
Chief Sanitary Inspector and Building Surveyor.*

BOROUGH OF TORQUAY.

Assistant Sanitary Inspector's Report.

*To His Worship the Mayor, Aldermen, and Councillors
of the Borough of Torquay.*

GENTLEMEN,

I have the honour to lay before the Council my Sixth Annual Report for the year ending December 31st, 1903.

Seventy-eight houses and premises have been visited and inspected on complaint or by request, and twenty-one smoke and nine hydraulic tests applied to the drains in various instances.

Fifty-four notices were served to abate nuisances, and of these forty-five were preliminary and nine legal.

In two instances the drains from blocks of four and five houses respectively were opened and examined by the Council, under Section 41 Public Health Act.

Two hundred and forty-five visits of inspection have been made to premises where work was in progress and also one hundred and forty-four smoke and sixty-two hydraulic tests applied to the drains after alterations to same.

Upon application for Sanitary Certificates, twelve houses and premises have been examined and reported upon, and on completion of the necessary work the certificates were granted in eight cases.

In connection with this work twenty-five smoke, and seventeen hydraulic, tests were made, and thirty-five visits of inspection while work was in progress.

In connection with new buildings in that portion of the Borough assigned to me, sixty-nine smoke tests were applied to the drains of forty-seven houses and premises, and thirty-seven visits of inspection made.

Twenty-four houses were examined and certified for habitation.

During the year, a great deal of time has been occupied in connection with the inspection of premises under the new Factory and Workshop Act, the work-rooms and work places having been measured up in regard to the required cubic space per head for those working therein, and an examination of the premises in regard to the Sanitary arrangements, cleanliness, and ventilation.

This inspection includes the following :—

Description of Trade.	Number.	No. of work-rooms or work places.
Draper, Dressmaker, and Milliners ...	20	31
Cabinet-maker and Upholsterers ...	9	18
Coach-builder and Wheelwrights ...	2	4
Laundries	18	40
Bakehouses	20	20
Tailors	11	12
Builders	7	21
Plumber, Painter, and Decorators ...	7	11
Harness Maker and Saddlers ...	6	6
Printing Works	3	8
Cycle „	2	6
Dye „	1	1
Bootmakers	2	3
Corset-maker	1	1
Shoeing Smiths	2	2
Marble Masons	2	2
Wood Turner	1	1
Picture Framer	1	2
Jewellers	2	3
Photographer	1	2
Ironmonger and Iron Founder ...	1	4
Quarries	5	5
Total ...	124	203

In connection with this work, two hundred and three work places on one hundred and twenty-four different premises have been visited and examined, and forty notices were served to remedy the following defects :—

Defects			Notices.
Want of W.C. accommodation	...	...	4
„ Water supply to W.C.	...	...	4
„ Limewashing and cleansing	...	...	17
Inadequate Ventilation	...	...	2
Overcrowding	...	...	5
Drain-opening in bakehouse	...	...	2
Defective floors	...	...	6
Total			40

I have during the month of May, and again in October, made half-yearly inspections of the thirty-eight Milkshops, Dairies, and Cowsheds in my district : in several instances it was necessary to enforce limewashing and cleansing, and also in one instance to serve a notice to remedy the damp walls and defective floor of a dairy.

Also, during the months of May-June, and again during November-December, the Dairies and Cowsheds on thirty-two farms outside the Borough (and from which milk and cream are sent into the Borough) have been visited and inspected with the Medical Officer. Marked improvement in the general condition and cleanliness is shewn, and in complying with the requirements.

As usual, the premises occupied by the French onion hawkers have been visited and inspected at midnight, and during the day time : three colonies of nineteen, sixteen, and thirteen were found. Overcrowding was taking place in one instance, and this was abated.

In one instance, the front basement room on premises illegally occupied as a cellar dwelling has been closed.

Nine disinfections have been carried out where 1 typhoid, 3 scarlet fever, 3 diphtheria, and 2 small-pox cases occurred. On the day previous to my return from my holiday, the small-pox case occurred in Ellacombe and was removed, and on three successive days I attended and disinfected the room and bedding.

In connection with the other cases, the drains of four houses were examined and tested. One legal and 4 preliminary notices were served to remedy defects found.

With regard to the disinfection of rooms after cases of phthisis, as previously pointed out, this is optional with the occupiers of the houses, and although offers to disinfect were made in every instance, none accepted, many occupiers saying they had carried out the disinfection themselves.

The following comparative table for the last four years will shew the results of this work in my district :—

Year.		No. of cases.	No. of disinfections.	Refusals.
1900	...	42	20	22
1901	...	45	14	31
1902	...	25	9	16
1903	...	12	0	12
Total	...	124	43	81

Office work, as usual, has demanded a certain amount of time in connection with the keeping of the necessary books and records of work, and in correspondence.

Owing to the amount of time occupied in connection with the inspection of workshops and other work, no house-to-house inspection has been made in my district during the past twelve months.

I am, Mr. Mayor and Gentlemen,

Yours obediently,

WILLIAM B. WATSON,

Cert. San. Inst., Sanitary Inspector ;

*Inspector of New Buildings, Factory & Workshop, and
Dairies, Cowsheds, & Milkshops, etc.*

BOROUGH OF TORQUAY.

Assistant Sanitary Inspector's Report.

*To His Worship the Mayor, Aldermen, and Councillors
of the Borough of Torquay.*

GENTLEMEN,

I have the pleasure to place before you my Third Annual Report of work done in the St. Mary-Church district for the year ending 31st December, 1903.

INFECTIOUS AND OTHER DISEASES.

Nineteen premises were visited after infectious diseases were reported: of these five were typhoid, eight scarlet fever, and six were diphtheria. In seven of these houses the drains were found defective, and had to be relaid or completely overhauled. In connection with this work, seventeen rooms were disinfected; one water and twenty-nine smoke tests were applied, and sixty-nine visits to premises made.

Three deaths occurred from phthisis or consumption, and all three houses were disinfected. Last year (1902) eight rooms were disinfected after death from this disease. Two rooms also were disinfected in which patients had died of cancer.

COMPLAINTS.

Forty-nine premises were visited on receipt of written and other complaints, as to various nuisances calling for abatement under the Public Health Act.

The following summary shows the nature and extent of the works carried out to suppress the nuisances found:—

Nine defective drains were relaid or repaired.

Four choked drains were cleared.

Twelve offensive deposits were removed.

Nine nuisances arising from keeping animals were abated.
 Five dirty premises were cleansed.
 Seven w.c.'s were supplied with flush cisterns.
 Eight other nuisances were abated.

During the elimination of these nuisances fourteen smoke tests were applied, and one hundred and forty-three visits of inspection were made.

HOUSE-TO-HOUSE INSPECTION.

Thirty-one houses were inspected at Hele, and in twenty-nine instances the drains were found very defective. In two cases new drains were laid and tested. The others await the laying of the proposed new sewer through Hele, so that more fall will be obtainable for the house drains.

Twenty-two houses in Plainmoor district were inspected and the drains thereof tested. Of these, eleven were found to have defective drains, which were subsequently relaid or repaired; and eight water-closets, which were without flushing apparatus were supplied with efficient flush cisterns.

Nineteen houses in the neighbourhood of Lawes Bridge, and sixteen at Babbacombe, were inspected by the Medical Officer of Health and myself. In these cases attention was directed to cleanliness of curtilages and the efficiency of w.c. accommodation. In twenty-nine of these houses the closets were found to be well supplied with water, and in the remaining six premises earth closets were in use, on account of our sewer being more than one hundred feet from the houses.

One earth closet was re-constructed on more up-to-date lines.

NEW BUILDINGS.

During the past year seventeen new buildings have been erected, which number shews an increase of five on the previous year. In addition six other premises have been visited, in consequence of such structural alterations or additions being executed as to bring them within the term "*new building*."

Nineteen Habitation and Drainage Certificates were issued. There were fifty-four applications of the smoke test, two water tests, and sixty-three visits made in respect of New Buildings.

HOUSES VISITED BY REQUEST.

Thirty premises were visited on request of owners and occupiers. The drains of these were tested, and defects found in all but three. Eighteen were large villas or better-class houses. In many cases a detailed report was written and sent to the owner, suggesting what works should be carried out to bring the drainage and sanitary arrangements up to our standard, in order that a certificate could be granted.

In connection with this work, a total of eighty-six smoke and five water tests were applied. One hundred and thirty-two visits to premises were made, and sixteen Sanitary Certificates were issued.

Three pounds ten shillings were received in drain-testing fees.

DAIRIES AND COWSHEDS.

Twenty-six cowsheds, and thirty-three dairies and milk-shops, situated in this district were visited twice during the year. The majority of these were found in a very creditable condition and well limewashed.

In those cases where the limewashing had not been carried out, the cowsheds were visited again after calling the attention of the occupiers to this matter.

The Medical Officer of Health and I visited some twenty dairy farms situated outside the Borough, and from whence some of the milkshops in the town get their supply. These were visited twice during the year. Attention was directed to the water supply; to the relative position of well and sanitary conveniences; and also to the paving, lighting, ventilation, and limewashing. It is gratifying to state that a marked improvement is noticeable in the general cleanliness since we first commenced these visits.

SLAUGHTER HOUSES.

Six of these are situated in the St. Mary-Church district. I have always found them in a satisfactory condition when inspected.

BAKEHOUSES.

Fifteen bakehouses in this locality were inspected during the year. One bakehouse was found to be re-occupied after having been empty for some two or three years. On making investigation the drainage was found defective, and the w.c. was without a flushing apparatus. The drain has since been repaired, and a new closet, with efficient water waste-preventer, has been constructed.

FACTORY AND WORKSHOPS ACT

In the course of the past twelve months shops were inspected, in addition to those of the year's report. All work-rooms and workshops were inspected to ascertain whether the required amount of ventilation existed. Attention was also directed to the state of the premises, and sanitary conveniences.

The following notices were issued :—

Six requiring limewashing of premises.

Six requiring the provision of new flush cisterns to be repaired.

The result of serving these notices was that the following improvements were effected :—

Six workshops and work-rooms were limewashed.

Five new flush cisterns were fixed to premises previously without means of flushing.

Two defective flush cisterns were repaired.

I am, Mr. Mayor and Gentlemen,

Yours obediently,

H. RUSSELL

BOROUGH OF TORQUAY.



Meteorological Report

FOR THE YEAR 1903.

FREDK. MARCH, F.R. Met. Soc., M.P.S.,
Borough Meteorologist.

*The Borough Observatory,
February 1st. 1904.*

METEOROLOGICAL REPORT.



*To the Worshipful the Mayor, Aldermen, and Councillors
of the Borough of Torquay.*

GENTLEMEN,

I have the honour to submit the appended Report upon work done at the Borough Meteorological Stations during the year 1903.

The instruments have been maintained throughout the year in good working order ; an old maximum thermometer, that by lapse of time had become inaccurate, was replaced by a new one in the spring. The Sunshine Recorders continue to give satisfactory results in their new position.

Observations have been taken twice daily, at 9 a.m. (local time), for publication locally, and between 4 and 5 p.m. for the Press. The morning readings have been forwarded in full detail to the Royal Meteorological Society, and a weekly return of bright sunshine has been made to the Meteorological Office. Statistics have also been sent to the Directors of the Rainfall Organization. A weekly weather report has been published regularly in the "Torquay Directory" and "Exeter Gazette," and a monthly report in the "Torquay Directory," "Western Morning News," and "Western Daily Mercury." During periods of exceptional weather, notes and figures have been supplied to the local Press, and when, as is usually the case, the exception has been in favour of Torquay, efforts had been made to secure publication in largely circulated London papers, not always with the success that appears to attend the efforts of other towns.

A telegraphic report upon the day's weather has been furnished to the following papers : London—"Daily Telegraph" (past year only, the managers in the summer declining further free insertions), "Daily Chronicle," "Standard," "Daily News" (summer only), "Morning Leader" (summer only), "Daily Mail" (through local correspondent when asked for), "Daily Express" (not often used, and no reply to letters of enquiry), "Liverpool Post" and "Journal of Commerce," "Manchester Guardian," "Newcastle Chronicle," "Bristol Mercury," "Sheffield Independent," "Leeds Mercury," "Yorkshire Observer" (summer only), Birmingham "Daily Post" (summer only), "Western Morning News," and "Western Daily Mercury."

The arrangement has been continued, under which the evening report is posted, for exhibition the following day, in a specially constructed frame, to 23 Stations and Receiving Offices on the Great Western system. Ten of these frames are exhibited in various parts of London, and the others are placed in such important centres as Liverpool, Manchester, Birmingham, and Cardiff.

I am, Gentlemen,

Your obedient Servant,

FREDERICK MARCH.

OBSERVATORY AND INSTRUMENTS.

The Observatory is organised and maintained by the Town Council, and is under the supervision of the Royal Meteorological Society.

The several Barometers, Thermometers, and Rain Gauges have been verified at Kew Observatory, and regularly examined by a representative from the Royal Meteorological Society. Readings are all corrected for instrumental errors.

The Hygrometrical Results are deduced from the daily morning readings of the Dry and Wet Bulb Thermometers by means of Glaisher's Tables.

The averages for Sunshine are the result of 15 years', for Temperature and Rainfall of 27 years', and for Pressure of 19 years' observations.

The following are the instruments and appliances in regular use, those marked with an asterisk being the property of the Torquay Natural History Society, and lent by them to the town:—

* The **Barometer** is a Fortin Standard, and is read twice daily, at 9 a.m. (local time) and at about 5 p.m. All readings are reduced to 32° F. and mean sea level, and are thus comparable with all readings similarly reduced.

* An **Aneroidograph**, by Richard Freres, gives in graphic manner the alternations of pressure.

There are two double louvred **Stevenson's Screens**, each containing **Dry and Wet Bulb**, and **Maximum and Minimum Thermometers**. The instruments are of Casella's make, and are so placed that the bulbs of the hygrometer are four feet above the level of the grass. One of these sets has been working throughout the year at Cary Green, where the official temperatures for the Royal Meteorological Society have been taken; the other in the Princess Gardens.

A third ***Stevenson's Screen**, also double louvred, has been in position in the Princess Gardens, and has held a ***Thermograph**, or Self-recording Thermometer, and an **Ozonometer**.

***Solar Radiation Thermometers**, black bulb in vacuo and bright bulb in vacuo, are contained in a stand of their own, placed in the Princess Gardens.

The **Grass Minimum** is by Hicks, and is placed on grass in the Princess Gardens about an inch above the ground. The readings have been far more satisfactory since its removal to this site.

The **Rain Gauges** are of copper, by Casella, and of Snowdon pattern. They are placed, one on Cary Green, one in the Princess Gardens, with the upper edge 12 inches above the level of the ground.

The **Sunshine Recorders** are placed upon the covered shelter at the southern end of the Pier deck.

They are—

(1). A Curtis' Improved Campbell-Stokes instrument, fitted with a $3\frac{1}{2}$ -inch spherical lens of crown glass, and working on the principle of the burning-glass.

(2). A Twin Jordan Photographic Recorder, which works by the differentiation in colour effected by bright sunlight on specially prepared chemical paper.

BAROMETRIC PRESSURE

In inches and thousandths.

Reduced to 32° F. and Sea Level.

1903.	Mean of Month.	Difference from Mean of Month.	Highest Reading.	Lowest Reading.	Extreme Range of Pressure.
January	29·985	− 0·065	30·524	29·302	1·225
February	30·172	+ 0·174	30·656	29·439	1·217
March	29·856	− 0·103	30·405	29·093	1·312
April	29·927	+ 0·051	30·466	29·284	1·182
May	29·873	− 0·103	30·394	29·240	1·154
June.....	30·026	+ 0·017	30·412	29·549	0·863
July	29·969	− 0·026	30·343	29·573	0·770
August.....	29·897	− 0·074	30·282	29·328	0·954
September	30·017	+ 0·061	30·516	29·609	0·907
October	29·695	− 0·268	30·125	29·188	0·937
November	30·108	+ 0·168	30·483	29·271	1·212
December	29·694	− 0·294	30·215	28·973	1·242
Year	29·935	− 0·036	30·656 Feb. 10th	28·973 Dec. 13th	1·683

REMARKS.

The mean barometric reading for the year was 29·935, being 0·047 below the mean of 1902, and 0·036 below the average of 19 years.

The highest reading was 30·656 on February 10th, and the lowest 28·973 on December 13th. The extreme range of pressure was 1·683.

In view of the exceptional character of the weather of 1903, the following table, which covers the returns of nine years, may be of interest:—

Year.	Mean Height of Barometer.	Difference from Average.	Highest Reading.	Lowest Reading.	Rainfall.
1895.....	29·937	—0·041	30·629	28·869	34"·37
1896.....	30·057	+0·079	30·896	28·541	26"·82
1897.....	29·987	+0·009	30·688	29·089	36"·28
1898.....	30·002	+0·024	30·683	28·640	27"·62
1899.....	30·002	+0·024	30·738	28·426	34"·90
1900.....	29·952	—0·028	30·696	29·013	33"·09
1901.....	29·990	+0·012	30·618	28·973	32"·82
1902.....	29·982	+0·003	30·911	28·941	30"·22
1903.....	29·935	—0·036	30·656	28·973	41"·15

SHADE TEMPERATURES.

Taken at 9 a.m. (Local Time).

1903.	Maximum mean.	Minimum mean.	Max. & Min. mean.	Difference from Average.	Range mean.	Highest.	Date.	Lowest.	Date.
	°	°	°	°	°	°		°	
Jan. ...	48·2	41·4	44·8	- 2·6	6·8	54·9	5th	30·0	13th&14th
Feb. ...	51·3	43·7	47·5	+ 4·6	8·2	57·1	9th	34·6	2nd
March.	52·5	42·8	47·7	+ 3·8	9·7	57·9	22nd	36·0	11th
April ...	53·0	41·2	47·1	- 1·1	11·8	57·8	11th	32·0	17th
May ...	59·4	48·2	53·8	+ 0·7	11·2	71·3	31st	40·3	13th
June...	62·0	51·1	56·6	- 2·2	10·9	76·2	1st	43·5	22nd
July ...	67·3	55·2	61·3	- 0·4	12·1	76·2	10th	48·3	14th
Aug....	65·4	54·4	59·9	- 1·7	11·0	70·1	8th	47·5	22nd
Sept. ...	62·9	53·5	58·2	- 0·1	9·4	71·9	1st	42·2	15th
Oct. ...	58·5	49·8	54·2	+ 2·4	8·7	63·8	3rd	40·9	29th
Nov....	52·8	44·8	48·8	+ 1·4	8·0	58·7	1st	33·4	30th
Dec. ...	46·7	39·3	43·0	- 0·5	7·4	53·0	7th	29·9	1st
Year	56·7	47·1	51·9	+ 0·8	9·6	76·2	June 1st July 10th	29·9	Dec. 1st

REMARKS.

The temperature figures for the year again bear witness to the equability of the climate of Torquay. The highest temperature recorded was $76^{\circ}2'$ on June 1st and July 10th. In June a temperature of 80° was reached or exceeded in nearly every district of Great Britain, the highest being 86° at Geddes-ton, in the Eastern district; and the same remark applies to the July readings, when an extreme of 87° was recorded at Loughborough. In July 32 stations of the Meteorological office reported maxima of 80° and over. The difference between a temperature of 76° and 87° on the hottest day of the year will be appreciated by all, without mention of the abundant shelter that Torquay offers, where, on the hottest day, walks may be found where not a ray of sunlight penetrates the leafy canopy the trees afford.

As it is still a current article of belief in London and all parts of the country that Torquay is swelteringly hot in the summer, visitors coming prepared for little short of incineration, the following table is re-printed from last year's Meteorological Report. The figures are taken from the official record of the Royal Meteorological Society, and refer to the year 1901;—

EXTREME TEMPERATURES.

	MAXIMUM.			MINIMUM.		
	July	Aug.	Sept.	Jan.	Feb.	March.
TORQUAY	78·6	77·6	68·1	22·5	25·5	25·5
Bath	87·5	81·0	71·8	21·8	19·5	22·1
Bournemouth	79·8	79·6	67·4	15·2	24·2	23·5
Brighton	81·7	83·9	69·0	23·7	23·1	25·9
Buxton	87·1	77·3	68·4	23·5	8·9	16·9
Cheltenham	89·0	81·4	70·6	22·1	11·3	18·2
Eastbourne	83·5	78·4	70·4	25·0	22·7	26·4
Guernsey	84·0	77·7	71·5	26·6	27·0	29·2
Llandudno	89·5	76·5	71·0	25·0	25·5	27·5
Margate	80·1	79·1	73·0	24·7	16·7	28·6
Norwood	87·0	82·7	75·5	21·5	19·8	23·4
Regent's Park	86·8	83·0	75·5	22·0	19·5	24·8
Southport	88·4	76·7	70·2	19·1	21·0	22·5
Tunbridge Wells	88·0	80·7	73·6	20·4	19·9	23·2
Wakefield	86·8	80·4	71·4	21·2	20·2	24·2

REMARKS ON SHADE TEMPERATURE—(continued).

The lowest reading was 29.9° on December 1st. The summary of meteorological observations for this month is not to hand at the time of writing, but a comparison can be made for the month of January, when our lowest reading was practically the same, 30.0° . In this month no fewer than 21 stations in England (not Great Britain) report minima of 20° and under, including Newton Reigny, 12.0° ; Harrogate, 13° ; Bawtry and Churchstoke and Durham, 14° ; Hereford, 16° ; Cambridge, 17° ; York, 19° ; and Bath, 20° . The difference between a shade temperature of 2° of frost and one of from 12° to 20° of frost will be still more readily appreciated. The lowest British reading in January was 1° at Braemar.

Further convincing evidence of the equability of the climate of Torquay is furnished by the following table, which has been prepared from a White Paper published by the Meteorological office. The figures for Torquay are for the 25 years ending in 1900; the figures in the return are for a period of 30 years, 1871—1900, but this difference could not appreciably affect the result.

	Scarborough	York	Yarmouth	Cambridge	Birmingham	Hereford	Oxford	Hastings	Blackpool	Liverpool	Llandudno	London	Torquay 1876—1900.
Maximum—													
Jan. to March ..	44.0	45.2	43.0	46.5	44.0	46.3	45.8	45.0	44.7	45.0	46.7	46.6	48.0
Apl. „ June....	55.9	54.6	55.6	62.7	58.7	61.7	61.2	58.5	58.7	58.4	58.5	62.9	59.9
July „ Sept. ..	63.7	66.7	65.0	70.0	65.5	68.3	68.1	66.4	64.7	64.4	65.1	70.5	67.0
Oct. „ Dec.	48.1	48.5	48.4	49.9	47.9	49.5	49.4	50.4	49.0	48.8	50.7	50.4	52.5
Minimum—													
Jan. to March ..	35.0	33.1	34.2	32.2	34.4	33.8	34.1	36.2	34.5	35.8	37.3	34.5	38.0
Apl. „ June....	44.1	41.1	45.3	42.7	43.8	43.2	44.2	46.0	43.7	45.6	45.8	45.1	46.9
July „ Sept. ..	51.8	50.4	53.7	50.7	51.5	50.1	51.8	54.4	52.0	53.2	53.4	52.5	53.9
Oct. „ Dec.	39.3	37.0	39.4	36.4	38.4	37.4	38.0	41.1	38.9	40.2	41.7	38.6	42.5
Mean—													
Jan. to March ..	39.5	39.2	38.6	39.3	39.2	40.1	40.0	40.6	39.6	40.4	42.0	40.6	43.0
Apl. „ June....	49.9	47.9	50.5	52.7	51.3	52.5	52.7	52.3	51.2	52.0	52.2	54.0	53.4
July „ Sept. ..	57.8	58.6	59.4	60.3	58.5	59.2	59.9	60.4	58.3	58.8	59.3	61.5	60.5
Oct. „ Dec.	43.7	42.8	43.9	43.1	42.2	43.5	43.7	45.8	44.0	44.5	46.2	44.5	47.5

DURATION OF BRIGHT SUNSHINE

In hours and tenths of an hour,

As recorded by the Jordan Photographic Twin Instrument.

1903.	Total Bright Sunshine.	Difference from Camp- bell-Stokes Record.	Greatest Amount in one day.	Date.	Sunless Days.
January	38·8	— 4·5	6·6	23rd	16
February	72·4	— 6·0	7·8	18th	9
March	142·8	+ 9·7	9·8	16th	4
April	177·0	— 3·6	11·7	18th&24th	4
May	219·2	— 2·1	14·2	24th	1
June.....	209·3	— 6·6	14·1	4th	4
July	232·3	— 4·7	14·1	1st	2
August.....	189·2	— 7·1	12·5	7th	3
September.....	154·6	— 0·6	11·1	7th	1
October	89·5	— 11·8	9·3	3rd	6
November	80·9	— 11·7	7·6	3rd	7
December	39·1	— 5·5	5·2	2nd & 5th	18
Year.....	1645·1	— 54·5	14·2	May 24th	75

(For Campbell-Stokes' Record see p. 62.)

RAINFALL

In inches and hundredths.

1903.		Total Amount.	Difference from Average.	Wet Days.	Mean Wet Day Rainfall.	Greatest fall in 24 hours.	Date
January ...	*C. G.	4·03	+0·80	19	0·17	1·19	4th
"	†P. G.	4·03					
February ...	C. G.	2·61	-0·08	14	0·19	0·63	27th
"	P. G.	2·64					
March	C. G.	4·24	+1·71	23	0·18	0·72	1st
"	P. G.	4·15					
April	C. G.	1·34	-1·07	9	0·15	0·33	29th & 30
"	P. G.	1·32					
May	C. G.	3·15	+1·19	16	0·20	0·69	2nd
"	P. G.	3·05					
June	C. G.	1·88	-1·34	14	0·13	0·54	19th
"	P. G.	2·00					25th
July	C. G.	3·62	+1·27	15	0·24	0·80	25th
"	P. G.	3·43					
August	C. G.	3·41	+0·77	14	0·24	0·82	18th
"	P. G.	3·37					
September	C. G.	3·28	+0·89	14	0·23	0·64	24th
"	P. G.	3·31					
October ...	C. G.	6·95	+3·01	28	0·25	0·69	14th
"	P. G.	6·92					
November	C. G.	1·44	-2·37	12	0·12	0·73	27th
"	P. G.	1·43					
December	C. G.	5·20	+1·35	20	0·26	1·14	12th
"	P. G.	4·81					
Year	C. G.	41·15	+6·14	198	0·21	1·19	Jan. 4th
"	P. G.	40·46					

* Cary Green,

† Princess Gardens,

REMARKS.

The total rainfall for the year amounted to 41·15 inches at Cary Green, and 40·46 inches in the Princess Gardens. The Cary Green rainfall is 20 % above the average of 27 years, and 29 % above the average of the last 10 years. The rainfall throughout the country was much above the average. The largest excesses were recorded in London, Hitchin, and Hartley Wintney, where they ranged from 13 to 15 inches, equivalent to 60 per cent. on the mean. The mean excess throughout England was probably about 28 %. The rainfall in London and the Thames basin generally seems to have been quite unprecedented, but in Torquay a heavier fall—43"·23—was recorded so recently as 1894.

The wettest month was October, with a total of 6"·95 and 28 days on which rain fell. In March there were 23 wet days, and in December 20; but it must be remembered that, in meteorological language, a fall of one-hundredth of an inch constitutes a wet day, and the term is applied, for instance, to a day on which a long spell of bright sunshine of some hours' duration is preceded by a smart shower that may not have lasted ten minutes.

In April and June the rainfall was considerably below the average. It is a noteworthy fact that the total rainfall for June was about one-half of what fell in London on the three days, 13th to 15th, and one third of the London rainfall for the month. Of the first 14 days of the next month 12 were dry, so that the wet season did not set in here until the middle of July. The rainfall for the next two months was distinctly above the average, and October was terribly wet. November, on the other hand, was singularly dry, with 18 days on which the rainfall, if any, did not exceed 0·05 inch.

The number of rainy days was 198, which is 33 more than the previous year, and considerably above the average. The heaviest fall was 1·19 inches on January 4th.

Other West country towns report totals as under :—

Bude, 42·27 inches	Tavistock, 63·73 inches
Yelverton, 71·50 inches	Liskeard, 66·62 inches.

HUMIDITY, CLOUD, OZONE, AND WIND.

1903.	HUMIDITY.			CLOUD Cloud <i>mean</i> 1 to 10.	OZONE. Per centage of possible.			WIND. Prevailing Quarters.
	Dry Bulb <i>mean</i> .	Wet Bulb <i>mean</i> .	Relative Humidity.		<i>Mean</i> Daily Amount.	Greatest Daily Amount	Least Daily Amount.	
	°	°	%		%	%	%	
January	44·6	42·7	85	7	68	95	10	W. & E.
February	47·4	44·9	83	7	67	90	40	W. & S.W.
March ...	48·3	45·3	79	6	63	85	35	W. & S.
April ...	48·7	44·3	71	6	52	85	30	W.
May	55·1	50·7	73	6	52	75	20	E. & W.
June.....	57·3	52·9	74	5	50	80	30	E. & S.E.
July	62·7	57·7	72	6	45	90	10	S.
August....	61·3	57·1	76	6	49	70	20	W.
Sept. ...	59·2	55·6	78	6	45	75	15	W.
October	55·4	52·4	81	6	56	90	30	W.
Nov.	48·6	46·0	81	6	49	85	10	W.
Dec.	43·0	41·2	86	7	38	70	10	E, W. & N.W.
Year...	52·6	49·2	78	6	53	95	10	W. & S.

REMARKS.

The mean daily amount of Cloud, estimated from eye observation, where clear sky = 0, and entirely overcast = 10, was 6.

The ozone test papers and scale used are Moffat's, and the principle on which the instrument works is the liberation of iodine by the action of ozone upon iodide of potassium contained in the paper, and the action of this free iodine upon starch, in solution of which the paper has also been soaked. This is only a rough test, but it is the same for all stations, and is approximately correct.

The mean daily amount of Ozone was 53% of the possible, with a maximum of 95% and a minimum of 10% of the possible.

It will be noticed with interest that in the winter months the prevailing winds were westerly.

The mean Humidity of the air, as taken by Mason's Hygrometer, was 78. As this figure is frequently misunderstood, it may be well to state that it is a percentage figure, and indicates the proportion of possible moisture, 100 standing for complete saturation. "Watery vapour is always to be found in the atmosphere; its presence is constant, but its proportion variable. It may perhaps be said that the air of England contains on an average something like 1½ per cent. of aqueous vapour" (*Huxley's Physiography*). It is a percentage of this percentage that is indicated by this figure.

The following table, compiled from Mr. Baxendell's Report (1902) to the Southport Corporation, shows that the air of Torquay is distinctly dry comparatively, and not humid, as is generally supposed:—

MEAN HUMIDITY TABLE.

	..	..	%		..	..	%
TORQUAY	..	..	78	Bath	..	..	78
Southport ..	..	..	83	Ilfracombe ..	..	..	82
Douglas ..	..	..	85	Tunbridge Wells ..	..	..	80
Morecambe ..	..	..	80	Folkestone ..	..	..	82
Harrogate ..	..	..	82	Bude ..	..	..	88
Llandudno ..	..	..	78	St. Leonard's ..	..	..	82
Buxton ..	..	..	83	Brighton ..	..	..	83
Malvern ..	..	..	80	Worthing ..	..	..	83
Cheltenham ..	..	..	84	Eastbourne ..	..	..	82
Clacton ..	..	..	83	Bournemouth ..	..	..	80
Margate ..	..	..	83	Ryde ..	..	..	80
Scilly ..	..	..	85	Weymouth ..	..	..	81
Guernsey ..	..	..	84	Newquay ..	..	..	86
Manchester ..	..	..	80	Falmouth ..	..	..	82
LONDON (Greenwich)	..	..	80				

SOLAR AND TERRESTRIAL RADIATION.

Month.	SOLAR.			ON GRASS.				Number of Days at 32° and below.
	Max. Mean	Highest.	Date.	Max. Solar Radiation.	Minimum mean.	Lowest.	Date.	
Jan.	63·6	84·2	29th	15·4	36·1	23·5	13th	10
Feb.	77·8	97·2	19th	26·5	39·3	28·0	3rd	5
March....	91·0	104·9	22nd	38·5	38·0	28·5	11th	4
April	94·2	106·2	6th	41·2	36·7	26·8	17th	8
May	96·5	111·4	30th	37·1	44·9	35·8	13th	0
June.....	102·7	115·6	27th	40·7	49·2	42·7	4th	0
July	107·6	123·3	9th	40·3	52·7	43·8	7th	0
Aug.	106·5	118·1	31st	41·1	51·4	42·9	22nd	0
Sept	107·3	119·8	1st	44·4	50·6	39·5	15th	0
Oct.	93·1	114·4	4th	34·6	46·6	35·7	31st	0
Nov.....	80·4	97·7	1st	27·6	38·9	29·2	20th & 28th	4
Dec.	60·9	80·7	7th	14·2	34·3	25·1	3rd	12
Year	90·1	123·3	July 9th	33·5	43·2	23·5	Jan. 13th	43

REMARKS.

The mean maximum solar temperature is taken with a sensitive maximum thermometer, which has the bulb and about an inch of the stem coated with dull lamp-black. The thermometer is enclosed in a vacuum tube, and mounted four feet above the ground. The measure of solar radiation is found by subtracting the maximum reading of this instrument from the maximum of a shade thermometer.

The highest solar temperatures were registered in July, and the maximum, 123.3° , was taken on the 9th of this month. The measure of solar radiation on this day was 48° . The lowest solar temperature was 36.5° on one of a series of sunless days in December, when the shade maximum temperature was 36.3° .

The mean minimum temperature taken on the grass was above freezing point each month of the year. In January there were 10 ground frosts, in December 12—in all 43. February was a mild month, with frost on five nights only. The sharpest frost was on January 13th, when the spirit fell to 20.5° .

DURATION OF BRIGHT SUNSHINE

In hours and tenths of an hour,

As recorded by the Campbell-Stokes' Standard Instrument.

1903.	Total Bright Sunshine.	Percentage Actual of Possible.	Difference from Average.	Greatest Amount in one day.	Date.	Percentage Actual of Possible.	Sunless Days.
	Hours.	%	Hours.	Hours.		%	
January ...	43·3	16·7	— 20·0	6·2	23rd	70	16
February ...	78·4	28·4	— 3·4	8·3	18th	79	9
March	133·1	36·5	— 6·6	9·7	3rd	80	5
April	180·6	44·0	+ 0·4	12·0	14th & 18th	89	5
May	221·3	48·7	— 9·4	14·1	25th	89	1
June	215·9	44·4	— 15·8	14·1	4th	88	4
July	237·0	48·6	+ 1·5	14·0	10th	95	2
August	196·3	44·3	— 10·0	12·6	31st	94	3
September..	155·2	41·6	— 9·1	10·8	18th	82	2
October ...	101·3	30·9	— 13·5	9·3	3rd	81	6
November..	92·6	35·0	+ 29·0	7·7	3rd	81	6
December ..	44·6	18·5	— 9·3	6·1	2nd	75	17
Year...	1699·6	38·6	— 66·2	14·1	May 25th & June 4.	95	76

REMARKS.

The total amount of Bright Sunshine registered by the Campbell-Stokes instrument was, in 1903, just short by 25 minutes of 1,700 hours. This amount was 79 hours in excess of that registered in 1902, but was still considerably below the average. The summer sunshine—April to September inclusive—amounted to 1206·3 hours, or 6·6 hours per day; and the winter sunshine—October to March inclusive—to 493·3 hours, or 2·9 hours per day. The sunshine for no fewer than nine of the twelve months was below the average; that of April, July, and November was above the average. November was a conspicuously bright month, with 93 hours of sunshine and 24 bright days.

June was again comparatively dull, though there were only four days in all on which no sunshine was recorded. The total of sunless days was 76, as against 75, 49, 56, 52, and 54 in the five preceding years. This is the highest aggregate of sunless days recorded in Torquay.

It will be noticed that the Campbell-Stokes' record of sunshine is 54·5 in excess of that of the Jordan Photographic Recorder. The totals obtained by the two instruments during the last five years are as under:—

			Campbell-Stokes.	Jordan.
1899	...	...	2038·9	1977·7
1900	...	...	1897·0	1857·8
1901	...	...	1876·5	1780·4
1902	...	...	1620·4	1573·4
1903	...	...	1699·6	1645·1

The excess of the Campbell-Stokes' aggregate over that of the Jordan thus amounts to 3·4 per cent. Now, the Campbell-Stokes' instrument is the one generally approved and used by meteorologists, but for 10 years bright sunshine was measured in Torquay by the Jordan instrument. This was because the Campbell-Stokes instrument then in use

possessed a faulty lens, and in consequence of refraction gave inadequate results. Since January 1st, 1899, a Campbell-Stokes' Recorder, fitted with an accurate lens, has been working side by side with the Jordan, and, as in most other stations, gives the more correct record. If the factor obtained from the above five years' totals be applied to the aggregate of sunshine in Torquay from 1889—1898, the total is increased from 17,185·2 hours to 17,769·6, and the average of the whole period—1889 to 1902—is increased from 1765·8 to 1782·8. This correction is of importance, in view of comparisons made with the sunshine records of other towns, and in view of the fact that there is, as yet, no known means of recording the full total of bright sunshine. At present, by either method, many hours each year are lost to the observer.

BRIGHT SUNSHINE, 1902.

COMPARISON WITH OTHER TOWNS AND HEALTH RESORTS.

From the Yearly Report of J. BAXENDALL, Esq., F.R. Met. Soc., the Fernley Observatory, Southport.

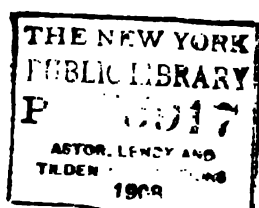
	Hours.		Hours.
TORQUAY ...	1620	Tunbridge Wells ...	1426
Southport ...	1463	Folkestone ...	1512
Scarborough ...	1268	Brighton ...	1582
Douglas ...	1488	St. Leonard's ...	1687
Harrogate ...	1444	Eastbourne ...	1683
Blackpool ...	1523	Bournemouth	no information
Llandudno ...	1598	Ventnor ...	1576
Buxton ...	1146	Newquay ...	1460
Margate ...	1466	Jersey ...	1802
Bath ...	1372	London ...	1228
Weston ...	1404	Manchester ...	937






FEB 10 1905

BOROUGH OF TORQUAY.



Annual Report

OF THE

MEDICAL OFFICER OF HEALTH

For the Year 1904,

BY

THOMAS DUNLOP, M.B., C.M., D.P.H.,

TOGETHER WITH THE

Annual Reports of the Sanitary Inspectors

AND THE

Report of the Borough Meteorologist.

TORQUAY:

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1905.



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[Handwritten signature]

BOROUGH OF TORQUAY, 1904.

Area of the Borough, 3,858 acres.

Rateable value, £187,000.

Population—Census (1901), 33,625 ; estimated at the middle of 1904, 33,850.

Number of inhabited houses —Census (1901), 6,614.

Average number of persons per house, 5.

Density of population, 8·7 persons per acre.

Crude death rate, 1904, 13·9 per 1000. Average for previous 9 years, 15·6 per 1000.

Corrected death rate, 1904, 14·2 per 1000. Average for previous 9 years, 14·2 per 1000.

Death rate if all visitors excluded, 12·4 per 1000.

Birth rate, 15·7 per 1000. Average for previous 9 years, 17·6 per 1000.

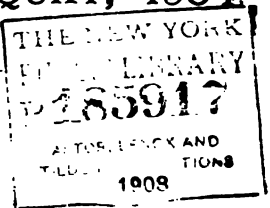
Infantile mortality, 1904, 120. Average for previous 9 years, 135.

Death rate from zymotic diseases, 38 per 1000.

Mean annual Temperature, 51·4.

Hours of Bright Sunshine Recorded, 1735·7.

Total Rainfall, 33·73 inches.





BOROUGH OF TORQUAY.

ANNUAL REPORT

OF THE

Medical Officer of Health

For 1904.

*To His Worship the Mayor, and to the Aldermen and Councillors
of the Borough of Torquay.*

GENTLEMEN,

In accordance with my statutory duty, I beg to present my Annual Report on the health of the inhabitants, and the sanitary circumstances of the Borough of Torquay. Certain portions of the report may appear too full of local details, but it must be remembered that the reports are prepared for the information of the Local Government Board and the County Council, as well as for the Town Council. The Medical Officer of Health is also required to report, for the information of the Secretary of State, on the administration of the Factory and Workshops Act in his district, and in this report are included details of the work done under this Act.

The birth-rate of 15·7 per 1000 is ·1 per 1000 less than in 1903. The gross death-rate—13·9—is satisfactory, and is 2·3 per 1000 less than that for England and Wales. The zymotic death-rate is extremely low, being only ·38 per 1000, that for England and Wales being 1·94. The infantile mortality of 120 per 1000 births, although not as low as in 1903, is considerably lower than the average, which is 135 per 1000 births.

My appointment as Medical Officer to the Education Authority has considerably helped me in my efforts to improve the healthiness of the town. Principally by giving me early notice of infectious illness, and by giving me a means of access to premises, so that I can form some estimate as to their sanitary condition.

I have to thank the members of the Sanitary Committee, and of the Town Council, for their kindness and support throughout the year, and also members of the Sanitary Staff for their ready assistance.

I am, Gentlemen,

Your obedient servant,

THOMAS DUNLOP, M.B.

Medical Officer Health.



THE BOROUGH.

The Borough of Torquay is formed by the civil parishes of **St. Mary-Church** and **Tormoham**. The total area of the Borough is **3858** acres. It is divided into nine wards, which, with their populations, according to the 1901 census, are as follows:—

Torre	...	...	...	...	3851
Waldon	...	...	...	...	3576
Upton	...	...	...	...	4339
Ellacombe	...	...	...	...	5911
Strand	...	...	...	...	3129
Torwood	...	...	...	...	3644
St. Mary-Church	...	...	...	...	3312
Babbacombe	...	...	...	...	3264
Chelston...	...	...	...	...	2599
The Borough	...	...	...	...	33,625

For the purpose of Sanitary administration, the Borough is divided into three districts, in each of which a Sanitary Inspector has full charge, under the Medical Officer of Health.

No. 1 District.—The whole of the Chelston, Torre, and Waldon Wards, that portion of the Strand Ward on the west side of Fleet Street, and that portion of the Upton Ward on the west side of Union Street.

No. 2 District.—The whole of the Torwood Ward, that portion of the Strand Ward on the east side of Fleet Street, the whole of Ellacombe Ward, and that portion of the Upton Ward on the east side of Union Street.

No. 3 District.—The whole of the St. Mary-Church and Babbacombe Wards.

The principal public Institutions from a Sanitary point of view are—

The Torbay Hospital in the Upton Ward.

The Western Hospital for Consumptives, and the Rosehill Children's Hospital in the Strand Ward.

Smyrna, or the Mildmay Consumptive Home, in the Ellacombe Ward.

St. Barnabas', St. Luke's, St. Raphael's, and Erith House, all Consumptive Homes, situated in the Torwood Ward.

The Borough Sanatorium for infectious diseases is situated on the Newton Abbot Road, just outside the Borough boundary, in the Newton Abbot Rural District. The Corporation possess another Isolation Hospital, also situated outside the boundary, about half a mile from the village of Cockington.

PHYSICAL FEATURES AND GENERAL CHARACTER OF THE DISTRICT.

These are of a highly diversified character, especially the central portions forming the Torquay promontory. In this district the two principal heights are the Warberry, 448 feet, and the Lincombe Hills, 372 feet, forming long ridges running N.E. and S.W., which are composed of the Lower Devonian grits and slates. The lesser heights, such as the Braddons, Waldon Park, and Chapel Hill, are formed of Middle Devonian limestone, which rests above the grits and slates mentioned.

On each side of this central area, viz., at St. Mary-Church and Chelston, rocks higher in the Geological scale for the most part prevail. These rocks belong to the Permian formation, and consist of beds of Breccia—a kind of conglomerate—and sandstones of a deep red colour, owing to the presence of peroxide of iron.

There is very little clay in any portion of the area and what does occur is of the nature of marl, and is confined to the lower levels of certain valleys or depressions, so that rain is not detained on the surface, as it rapidly disappears through these rather pervious rocks and soils.

METEOROLOGY.

Full details of the Meteorology of the Borough will be seen in the appended Annual report of Mr. F. March, F.R. Met. Soc., M.P.S., Borough Meteorologist; but the following resumé of the climatic conditions may be of interest:—

Highest Maximum Temperature	78°·0
Lowest Minimum	28°·0
Mean Maximum	56°·5
Mean Minimum	46°·3
Mean of Maximum and Minimum	51°·4
Difference from average	+ 0°·3
No. of days on which rain fell	171
Total fall in inches	33·73
No. of hours of bright sunshine	1735·7

THE WINTER CLIMATE.

In an annotation in "The Lancet" for the week ending Saturday April 16th, 1903, the following table is given, showing the character of the winter weather at some English Health Resorts.

Stations.	Temperature.						Rainfall.		Sun-shine.
	Highest maximum.	Lowest minimum.	Mean maximum.	Mean minimum.	Mean of maximum and minimum.	Difference from average.	No. of days with rain.	Total fall.	Total number of hours.
	Deg. F.	Deg. F.	Deg. F.	Deg. F.	Deg. F.	Deg. F.		Inch.	
Harrogate	56	20	41	34	37.5	-0.7	79	11.3	193
Bath	59	21	46	35	40.5	-1.0	72	10.8	198
Tunbridge Wells*	57	23	43	33	38.0	-1.5	57	10.8	188
Hastings	55	23	43	33	38.0	-2.4	80	11.0	222
TORQUAY	59	30	47	39	43.0	-0.2	78	18.7	285
Falmouth	55	30	47	40	43.5	-0.6	83	24.0	254
Scilly Isles	55	33	49	42	45.5	-0.6	88	18.7	260
Jersey	56	28	47	39	43.0	-0.6	85	14.9	285

* The observations for Tunbridge Wells are for January to March only.

These figures are compared with those in Foreign Health Resorts such as Nice, Florence, &c. It is shown that, although it was slightly warmer at most of the Foreign Resorts, yet the nights at Torquay were just as warm as those of Nice. Again, the difference between the day and night temperatures at Nice was 12°, while at Torquay it was only 8°. On only two or three occasions did the screened thermometer at Torquay show a slight frost. The amount of Ozone present in Torquay during the whole winter was 47% of the possible, being lowest—38% in December, and highest—59% in February.

THE SUMMER CLIMATE.

There appears to be a widely spread fallacy that Torquay in Summer is unbearable on account of the heat. That this is

inaccurate is proved by the Meteorological returns, which show that during the hottest weather the Temperature here is often from 5 to 10 degrees less than that recorded in London ; and also by the increasing number of visitors, who year after year spend their holidays here. Although Torquay is favoured with a very large amount of sunshine (being christened "Sunshineland" by Mr. Julian Ralph, the well-known war and special correspondent), yet from its wide sea front, and being for the most part built on the slopes of hills, it is constantly fanned by cool breezes, either from the Sea or from Dartmoor in the rear.

WATER SUPPLY.

The water supply of Torquay is derived from upland surface : gathering ground about 15 miles from Torquay, on the borders of Dartmoor. The area of the gathering ground is about 2,241 acres, and is composed of :—

	Acres.
Moorland	584
Woods	75
Woods (new)	30
Land within zone	350
Land under cultivation	212
Grazing	990
Total	2241

At the present time the water is stored in two large reservoirs—the Tottiford Reservoir containing 103,000,000 gallons, and the Kennick Reservoir 194,000,000 gallons.

The supply is augmented by taking water from the Trenchford stream, the yearly average amount being 170,000,000 gallons. In order to reduce to a minimum the possibility of there being any shortage of water in very dry seasons, the Corporation applied for and obtained an Act of Parliament, enabling them to build another reservoir in the Trenchford Valley, impounding the waters of the Trenchford stream. This reservoir will be capable of containing 200,000,000 gallons.

The work of constructing the dam was commenced in February, 1904, and has continued satisfactorily since then. It is estimated that it will be three years before the impounded water can be delivered to the consumers.

In the Parliamentary Session of 1896-7 the Corporation obtained power to purchase the whole watershed. This they did, and were enabled to remove all farms and inhabited buildings from the area, thus doing away with a constant menace to the purity of the water. The reservoirs and all streams and feeders have also been surrounded by zone fences with trenches inside; the latter being intended to catch all surface water, and cause it to percolate through the ground before reaching the streams. The improved quality of the water fully justifies the Corporation in the large expenditure incurred, and has reduced the possibility of pollution to a minimum.

Much labour has during the year been expended in cleaning up and clearing the streams, and in endeavouring to prevent the passage of peaty matters into the reservoirs.

The average amount of rain falling on the watershed was 36·49 inches, and the average amount of evaporation was 18·4 inches over a water area of about 37 acres.

The water supply is continuous, and the average amount used for all purposes was 34·73 gallons per head per day. During the continuous dry weather in the summer, this reached a maximum of 42 gallons, showing that the water was being extravagantly used for garden purposes.

As to the quality of the water, I cannot do better than give the opinion of Professor Percy Franklin, who visited the gathering grounds in 1903, and after examining samples of the water, both chemically and bacteriologically, reported as follows :—

“ A source of water supply, which, in respect of freedom from suspicion, ranks with the best upland surface supplies in the Kingdom. The water also contains such a small amount of lime and magnesia salts that it possesses all the well-known advantages of very soft water, whilst its slightly alkaline reaction prevents it from having any solvent power on lead.”

The following tables give the results of his analyses :—

RESULTS OF ANALYSIS EXPRESSED IN PARTS PER 100,000.

Number of Sample.	Description.	Total Solid matters.	Organic Carbon.	Organic Nitrogen.	Ammonia.	Nitrogen as Nitrates and Nitrites.	Total Combined Nitrogen.	Chlorine.	Hardness.			Remarks.
									Temp.	Perm.	Total.	
	TORQUAY WATER SUPPLY. <i>April 25th, 1903.</i>											
12,851	Trenchford Source, 12.40 p.m.	6.36	.056	.008	Trace.	.206	.214	1.30	0.4	2.3	2.7	Very slightly turbid, palatable, free from poisonous metals and nitrites.
12,852	Trenchford Gauge, 3.10 p.m.	7.00	.094	.009	Trace.	.165	.174	1.47	0.2	2.5	2.7	Very slightly turbid, palatable, free from poisonous metals and nitrites.
12,853	Main Stream, near Blackingstone Farm, 1.40 p.m.	6.20	.212	.029	Trace.	.044	.073	1.35	0.3	2.0	2.3	Slightly turbid, very slight peaty taste, free from poisonous metals and nitrites.
12,854	Kennick Reservoir, 2.25 p.m.	6.40	.192	.028	Trace.	.095	.123	1.50	0.4	2.1	2.5	Very slightly turbid, very slight peaty taste, free from poisonous metals and nitrites.
12,855	Tottiford Reservoir, 2.55 p.m.	6.80	.236	.032	Trace.	.097	.129	1.45	0.5	2.1	2.6	Very slightly turbid, very slight peaty taste, free from poisonous metals and nitrites.
12,856	Town Hall, 8.25 a.m.	6.84	.141	.018	Trace.	.118	.136	1.50	0.3	2.2	2.5	Very slightly turbid, very slight peaty taste, free from poisonous metals.

PERCY F. FRANKLAND, Ph.D., M.Sc., LL.D., F.R.S.
May 11th, 1903.

RESULTS OF BACTERIOLOGICAL EXAMINATION.

Number of Sample.	Description.	Number of Micro-organisms obtained from One Cubic Centimetre of Water					Cultivation in Plain Broth.	Cultivation in Carbolic Broth.	Anaerobic Cultivation of Spores in Milk.	Remarks.
		Ordinary Culture.	Number of Days Incubated	Carbolic Culture.	Gelatin Culture.	Number of Days Incubated				
	TORQUAY WATER SUPPLY. <i>April 25th, 1903.</i>									
12,857	Trenchford Source, 12.40 p.m.	248 347	2 3	3 —	— —	7 —	No Indol. ..	No Indol. ..	0	
12,858	Trenchford Gauge, 3.10 p.m.	228 520	2 5	0 —	— —	7 —	Very faint Indol. ..	No Indol. ..	0	
12,859	Main Stream near Blackingstone Farm, 1.40 p.m. ..	435 770	2 3	16 —	— —	7 —	No Indol. ..	No Indol. ..	Coagulated (4 days)	
12,860	Kennick Reservoir, 2.25 p.m.	133 209	2 3	0 —	— —	7 —	No Indol. ..	No Indol. ..	0	
12,861	Tottiford Reservoir, 2.55 p.m.	45 160	2 7	0 —	— —	7 —	Very faint Indol. ..	Very faint Indol. ..	0	
12,862	Town Hall, 8.25 a.m. ..	218 410	2 5	1 —	— —	7 —	No Indol. ..	No Indol. ..	0	

PERCY F. FRANKLAND, Ph.D., M.Sc., LL.D., F.R.S.
May 11th, 1903.

In order that frequent chemical analyses might be made, the Corporation gave me power to equip a laboratory for this purpose. This was ready for use in March, and since then the water supplied to the town has been regularly examined, besides a number of analyses of the water from the various springs and streams.

The following results of a recent analysis are typical :—

PHYSICAL CHARACTERS.

Colour ...	...	Slight brownish yellow.
Turbidity ...	...	Cloudy.
Odour ...	...	None.
Deposit ...	...	A very minute amount of vegetable debris.

CHEMICAL RESULTS.

Expressed in parts per 100,000.

Total solids ...	...	...	...	7·0
Chloride ...	...	...	...	1·7
Hardness ...	...	...	...	2·24
Nitrites ...	...	...	...	Nil.
Nitrates ...	...	...	...	·12
Free Ammonia ...	...	...	...	·001
Organic Ammonia ...	...	...	...	·009
Oxygen absorbed in 4 hrs. at 80° F.	...	...	...	·070
Poisonous metals ...	...	...	...	Nil.

From an examination of the above results and a knowledge of the gathering ground, I have no hesitation in classing this water as an excellent one for all domestic purposes.

SEWERAGE.

The sewage of the whole district, and most of the storm-water, is conveyed to the main sewer in Fleet Street. That of the low-level system, which comprises the area covered by the Strand, Torbay Road, Vaughan Parade, Victoria Parade, Beacon Hill, George Street, and Swan Street, being pumped into the main sewer by means of automatic hydraulic pumps. The main sewer is 7 feet in diameter, and runs from Fleet Street to Hope's Nose, a distance of almost two miles. The outfall is at such a level that the sewage is discharged at all states of the tide. No method of treatment is adopted, as the flow of current is out towards mid-channel beyond Berry Head, and does not under any circumstances return towards the bay.

During the year, the main sewer through Hele has been completely relaid, and many of the house drains which were found to be defective have been renewed. New sewers have also been laid in Babbacombe Road and the Lisburn district, to do away with the flooding which used to take place during times of heavy rain.

Progress has been made in improving the ventilation of the sewers. Thirty-six ventilating columns have been erected in various parts of the town, and it is proposed to erect forty-seven more as soon as possible. Seven flushing tanks have also been constructed in the Chelston and Barton districts.

HOUSE DRAINAGE.

The inspection and testing of the drains of all new houses is done by the Sanitary Inspectors, a total of 66 systems having been tested during the year.

The granting of Sanitary Certificates by the Corporation.

The number of certificates granted during the year was 89, an increase of 23 over that for 1903. This is very satisfactory, as it is an assurance that these houses have had all their sanitary arrangements brought up to date. It also shows that the public are beginning to recognise the necessity for some assurance that the drainage of their houses is in a thoroughly sanitary condition. Too often, however, intending tenants are satisfied with the verbal assurance of agents or owners that this is the case, only to find that when a test is made the drains are defective. I consider that no person should be satisfied with anything less than a certificate not more than three years old. It is well known that in Torquay, where large numbers of the houses are built on the sides of the hills, there are frequent subsidences which are likely to crack the joints of drain pipes; this allows the roots of trees and shrubs to find their way into the pipe, where they soon form a thick matting, causing complete blocking of the drains. I have on several occasions seen pipes so filled that it has been impossible to pass a walking stick through them.

COLLECTION AND DISPOSAL OF REFUSE.

House refuse is removed by the employées of the Corporation, under the Surveyor's Department. In most parts of the town it is removed once a week, but in certain parts twice. It is carted

to the destructor works in Upton Valley, and there consumed, about 12,000 tons being dealt with annually. The destructor is a "Warner Perfectus" of four cells. The boilers are heated from the furnaces, and the steam generated can be used to drive donkey-engine, vertical engine for running blower, 25-horse power engine for running mortar mill and electrical installation. The clinker produced is ground and used for mortar: for this there is a good demand.

During the year, the Destructor Committee decided to destroy all garden refuse that was brought to the works. This was done as the result of complaints of the difficulty of getting rid of it, and on the representation of the Sanitary Committee, that nuisances were being caused by the depositing of large quantities in the common private lanes at the rear of houses. The amount of green and wet refuse brought has caused great difficulties in its disposal.

POPULATION.

The population of the Borough at the 1901 census was found to be 33,625, of whom 13,339 were males, and 20,286 females. The number of inhabited houses being 6,614, and the average number of persons per house was 5.

In estimating the population last year, I showed that by adding the natural increase, that is, the excess of births over deaths for the past three years to the census population, a total of almost 33,800 was obtained. This estimate was confirmed by a second method, that is, by multiplying the number of inhabited houses by the average number of persons found to be inhabiting each house at the last census. So that for the calculation of the various rates, this figure (33,800) was used.

In estimating the population for 1904, I consider that adding the natural increase to last year's population will be sufficiently accurate, although some 60 new houses have been occupied, and there seem to be fewer unlet houses in the district. In preparing the various rates, an estimated population of 33,850 will therefore be used.

The average number of persons per acre is 8·7.

It is necessary, in preparing statistics and comparing the various death rates of Torquay with those of the whole country, to consider the age and sex distribution of the population. The population of a district, in which the proportions of males to females, or of young persons to old persons are different to those

of the country generally, will suffer more than the whole country from the diseases which particularly affect persons of the age and sex which predominate in the district. In order to ensure a just comparison between the death-rate of such a district and the country as a whole, it is necessary to raise or lower the gross death-rate of the district to what they would be if the proportions of the local population in respect of age and sex were the same as those in the country generally.

As Torquay has a much larger proportion of females to males in its population, and of people at advanced ages, than that of England and Wales, I last year calculated a factor by which all Torquay rates have to be multiplied to compare them with those of the whole country. This factor was '8044.

BIRTHS.

The births registered during 1904 numbered 530—males 250, females 280—being 6 less than in 1903.

The numbers registered in each quarter of the year are as follows:—

1st quarter	...	...	...	112
2nd „	...	...	...	153
3rd „	...	...	...	148
4th „	...	...	...	117
Total	...	...	...	530

The birth rate was 15·7 per 1000, being ·2 per 1000 less than 1903. It is the lowest rate recorded. The following table shows the gradual decline in the Torquay birth-rate. It must, however, be remembered that the birth-rate of England and Wales is also falling, and the age and sex distribution of the population of the district must also be taken into account when comparing it with other places.

Years.	Number of Births.	Torquay Birth Rate, per 1,000 living.	England & Wales Birth Rate, per 1,000 living.
1900	559	16·6	28·9
1901	556	16·5	28·5
1902	540	16·0	28·6
1903	536	15·9	28·4
1904	530	15·7	27·9

VACCINATION.

Through the courtesy of Mr. Edwards, the Vaccination Officer, I am able to give the results of primary vaccination for the years from 1897 to 1903. It is very satisfactory to note the large percentage of children protected from this loathsome disease.

Year.	Total births registered	Successfully vaccinated	Unsusceptible of Vaccination	Had Small-pox	Number of Certificates from Conscientious Objectors	Died Unvaccinated	Postponed by Medical Certificate	Removed to other districts the Vaccination Officer of which has been apprised	Removed Address unknown	Percentage successfully Vaccinated	Excluding those who died Unvaccinated. Percentage
1897	683	581	2	—	—	59	—	4	20	85	93
1898	664	544	2	—	10	64	6	7	25	82	90
1899	612	505	6	—	14	67	6	3	11	83	95
1900	596	502	1	—	15	47	7	3	21	84	91
1901	597	491	2	—	16	57	13	1	17	82	91
1902	579	488	2	—	8	61	4	4	8	84	92
1903	565	508	2	—	14	34	1	3	3	90	95

INFECTIOUS DISEASES.

Under the Torquay Harbour and District Act, 1886, provision was made for the compulsory notification of the dangerous infectious diseases. It also contained similar clauses to those in the Infectious Diseases Prevention Act, 1890, which rendered its adoption unnecessary.

NOTIFICATIONS.

During the year 45 cases were notified. Four were cases of Diphtheria, three Erysipelas, twenty-eight Scarlet Fever, nine Enteric Fever and one Puerperal Fever.

Comparison with previous years.

Notifiable Disease.	1904.	1903.	1902.	1901.	1900.
Small-pox	—	2	—	—	—
Cholera	—	—	—	—	—
Diphtheria	4	13	9	5	8
Membranous croup	—	—	—	—	—
Erysipelas	3	3	3	3	7
Scarlet fever ..	28	21	17	62	36
Typhus fever ..	—	—	—	—	—
Enteric fever ..	9	9	8	18	7
Relapsing fever ..	—	—	—	—	—
Continued fever ..	—	—	—	—	—
Puerperal fever ..	1	1	—	1	—
Plague	—	—	—	—	—
*Chicken Pox ..	—	5	33	—	—
Totals ..	45	54	70	89	58

*In 1903 Chicken Pox was notifiable for the first three months of the year, and in 1902 for the last nine months.

The following table gives the notifications during each month of 1903 :—

	Small-pox.	Diphtheria and Membranous Croup.	Enteric Fever.	Puerperal Fever.	Scarlet Fever.	Erysipelas.	Chicken-pox	Total.
January ..	—	—	1	—	1	1	—	3
February ..	—	1	2	—	2	—	—	5
March ..	—	1	—	—	2	1	—	4
April ..	—	—	1	—	—	—	—	1
May ..	—	—	—	—	—	—	—	0
June ..	—	—	—	—	1	—	—	1
July ..	—	—	3	—	2	1	—	6
August ..	—	—	2	—	4	—	—	6
September ..	—	1	—	—	1	—	—	2
October ..	—	1	—	1	6	—	—	8
November ..	—	—	—	—	4	—	—	4
December ..	—	—	—	—	5	—	—	5
Totals ..	—	4	9	1	28	3	—	45

In table III. of the Local Government Board returns on page 39, full details are given of the age of patients, the number occurring in each ward, and the number of such removed to Hospital.

We there find that a total of 30 out of 45 were removed, this is equal to 66 per cent. They were as follows :—

Disease.	Number removed.	Percentage of total cases.	Where taken.
Diphtheria	2	50%	Sanatorium, Newton Road
Scarlet Fever ..	22	78%	" " "
Enteric Fever ..	6	66%	Five to Torbay Hospital, one Rosehill, Children's Hospital

STEPS TAKEN TO PREVENT THE SPREAD OF INFECTIOUS DISEASE.

On the receipt of a notification, the house is visited as soon as possible, particulars as to source of infection, milk supply, school attended, drainage, etc., obtained, and if necessary arrangements made for the removal of the patient to the Sanatorium. Frequently the Medical Attendant notifies that the case is one suitable for treatment in the Sanatorium, a step which greatly facilitates their early removal.

After removal, or on recovery, should the patient be isolated at home, the infected rooms and bedding are fumigated with formaline.

I am glad to be able to report that the Local Government Board have granted permission to borrow the money required for the purchase of a modern steam disinfecter. The building is now in the course of erection at the Sanatorium, and will be ready for use in a very short time. This will meet a long felt want.

Where it is found that children in an infected house are attending one of the public elementary schools, the Attendance Officer is notified of the case. All cases suspected to be infectious by the School Attendance Officer, and where no doctor is in attendance, are notified to me as Medical Officer to the Education Authority.

MEANS OF ISOLATION.

The Borough Sanatorium, Newton Abbot Road, consists of the administrative Building—a Scarlet Fever ward block, consisting of two wards, with 7 beds in each; and a Diphtheria ward block, two wards, with seven beds in each. There is also a private ward for one patient, with Nurse's room attached.

ENTERIC FEVER.

The authorities of the Torbay Hospital have always been found willing to treat cases of Enteric Fever.

THE COCKINGTON SANATORIUM.

When the Chelston Urban District was absorbed by the Borough, the Corporation were compelled to take over the Isolation Hospital of that district. This building is considerably more than half-a-mile from any inhabited house. It was used in 1903

for the reception of two imported cases of small-pox, and has been kept in readiness for any future cases. I consider it absolutely necessary to have accommodation for the reception of such cases, especially in a health resort such as Torquay, where the introduction of small-pox is not unlikely, and the consequences of an epidemic would be disastrous.

SMALL-POX.

The Town remained free from Small-pox during 1904.

SCARLET FEVER.

Twenty-eight cases were notified during the year, none of which ended fatally. Most of the cases occurred in the last half of the year. Twenty-two were removed to the Sanatorium. Six cases were undoubtedly imported, the patients having only been in the district a few days prior to the onset of the disease.

DIPHTHERIA.

Only four cases were notified, compared with thirteen in 1903. Two were removed to the Sanatorium, one proving fatal a few hours after admission. It is difficult to trace the origin of the infection in most cases of diphtheria. In the case which ended fatally, there was a history of the lad a few days before the onset endeavouring to recover a penny from the street gully, which, when examined later, was found to have the tongue of the trap broken, allowing the free escape of sewer air. In the other three cases, examination of the drains showed defects, which, although not accounting for the disease, yet may render the inhabitants of such houses more susceptible to the infection.

ENTERIC FEVER.

Nine cases were notified, the same number as in 1903. Three patients were non-residents, two being admitted for treatment to the Torbay Hospital from outside, and the third, a tramp, also admitted to that institution, having arrived here ill. Four cases proved fatal. The supposed sources of infection are as follows:—

Two were infected from an unrecognised case.

In one case the patient was a child of two years. Both the Medical Attendant and I suspected that the consumption of what are known as "sand soles" was the cause of the disease.

These are a species of flat fish, which are obtained from tidal waters, and are cooked without previous dressing by placing them for one or two minutes in boiling water. The food of such fish consists of small crustaceans and molluscs, which in a tidal river, subject to sewage pollution, are not unlikely to contain phoid and other sewage organisms.

The history in another case proved almost conclusively that the infection was due to eating specifically infected cockles.

One case occurred in a child who was suffering from spinal curvature, for which he had been in hospital some time. It is suspected that the infection was conveyed in some article of food brought by friends.

In another case defective drainage was a possible source.

The remaining three cases, as previously stated, were reported.

ERYSIPELAS.

Three cases were notified, and none were fatal.

PUERPERAL FEVER.

One case was notified. The midwife in attendance was warned against going to any fresh cases for a time.

Working of the Midwives Act, 1902.

The Town Council have now taken over the local administration of the Act. A committee was formed in November to carry out its requirements. Placards and newspaper advertisements have been issued, drawing the attention of all midwives to the Act, and an endeavour made to get these registered, though only two months remain in which midwives can register, who were in *bona fide* practice one year prior to July, 1902, yet very few have applied.

The Non-Notifiable Infectious Diseases, such as Measles, Whooping Cough, etc., will be dealt with under deaths from these diseases.

SANATORIUM REPORT

For the Year ending March 31st, 1904.

To the Chairman and Members of the Sanitary Committee.

GENTLEMEN,

On the 1st April, 1903, there were no patients in the hospital; from that date till the 31st March, 1904, 24 patients were admitted, two less than in the previous year. The patients were under treatment a period of 809 days, giving an average stay in hospital of 36 days.

Fifteen were cases of scarlet fever. One patient was admitted, suspected to be suffering from scarlet fever, but was discharged after being under observation a fortnight. There were eight cases of diphtheria. One of these proved fatal a few hours after admission. This was the only death.

The following table shows the cost of working for the twelve months:—

1904.	EXPENDITURE.		£	s.	d.
Diet of Patients	...	...	...	61	15 3
Wages and Diet of Nurses	...	...	...	103	17 0
Laundress	...	...	...	55	10 0
Curator	...	...	...	64	11 6
Surveyor's Account	...	...	...	21	0 10
Tradesmen's Accounts	...	...	...	37	17 0
Rents, Rates and Insurance	...	...	...	19	4 3
Drugs	...	...	...	14	15 0
Medical Fees	...	...	...	11	11 0
Conveyance of Patients	...	...	...	8	14 0
Coal, Coke and Wood	...	...	...	52	5 3
Rent of Telephone	...	...	...	10	0 0
Painting	...	...	...	23	10 0
Total			...	<u>£484</u>	<u>11 1</u>

THE COCKINGTON SANATORIUM.

As reported in my annual report for 1903, the above sanatorium had to be opened for the reception of two cases of small-pox on August 14th, 1903. The patients were discharged cured on September 28th, 1903. As it was impossible to safely disinfect the clothing of patients and attendants, they were burnt and the owners compensated.

The total cost of this hospital for the year was £113 16s. 4d., but as the rent and taxes came to £50 16s. 10d., the cost of treatment came to £62 19s. 6d.

The accounts are as follows :—

				£	s.	d.
Rent and Taxes ...	...	...	...	50	16	10
Nurse's Fee ...	...	...	...	21	10	6
Diet of Patients and Nurse ...	...	...	...	13	2	8
Drugs, etc. ...	...	...	...	1	13	1
Tradesmen's Accounts ...	...	...	...	7	13	2
Compensation Paid for Destroyed Clothing	...	...	...	19	0	1
Total ...	...	...	...	£113	16	4

The total cost of both hospitals being :—

				£	s.	d.
Cockington Sanatorium ...	...	...	...	113	16	4
The Borough Sanatorium ...	...	...	...	484	11	1
Total ...	...	...	...	£598	7	5

The following table gives the cost of this and previous years :—

					£	s.	d.
1898.	30	Patients cost	...	...	493	13	2
1899.	35	" "	...	..	513	14	11
1900.	42	" "	...	..	564	2	10
1901.	26	" "	...	...	515	15	11
1902.	58	" "	...	...	903	6	6
1903.	26	" "	...	...	570	12	5
1904.	26	" "	...	...	598	7	5

I am, Gentlemen,

Your obedient servant,

T. DUNLOP,

Medical Superintendent.

DEATHS.

During 1904, the number of deaths registered in Torquay was 473—males 211, females 262.

The gross death-rate for the Borough is equal to 13·9 per 1000. If it was permissible to eliminate the deaths of 60 visitors, the rate would be equal to 12·4 per 1000 per annum. To obtain a correct death-rate, it is necessary to add 28 deaths of persons occurring in the Newton Abbot Workhouse who belong to Torquay, also one death in the Borough Sanatorium, and subtract the deaths of 20 non residents who died in Hospitals and Public Institutions in the town. The total deaths would therefore be 482, and the corrected rate equal to 14·2 per 1000 per annum.

The following table gives the Torquay death-rates for recent years, compared with those in England and Wales for corresponding years :—

Year.	Number of Deaths.	Death-rate.	Death-rate excluding deaths of Visitors.	Death-rate of England and Wales.
1900	460*	13·7	12·8	18·3
1901	476*	14·1	12·9	16·9
1902	491*	14·6	13·3	16·3
1903	448	13·3	11·5	15·4
1904	482	14·2	12·4	16·2

* No record kept of deaths in Newton Workhouse of Torquay Residents.

If the death-rate of 14·2 is corrected for age and sex distribution, so as to make it strictly comparable with that for England and Wales, it would be equal to 11·4 per 1000 per annum.

During the year there were 27 inquests, while 5 deaths were uncertified.

DEATHS AT VARIOUS AGE PERIODS.

				Percentage of total deaths.	
Of the total of 482 deaths—					
64	were under 1 year of age	...	...	13.3	
22	1 year and under 5 years	...	...	4.6	
11	5 years and under 15 years	...	...	2.3	
21	15 " " 25 "	...	...	4.4	
163	25 " " 65 "	...	...	33.7	
201	over 65 years	...	...	41.7	
Total	482 at all ages	...	...	...	100.0

The deaths in the various wards are given in table II., on page 38.

INFANTILE MORTALITY.

The total number of deaths of children under 1 year was 64. As there were 530 births during the year, the infantile mortality is equal to 120 per 1000 births. The rate for 1903 was 102 per 1000 births, and the average for the past 9 years 135. The rate for England and Wales for 1903 was 146 per 1000 births.

The following table gives the cause of death among infants during the past four years:—

				1904.	1903.	1902.	1901.	1900.
Measles	...	...	...	1	0	1	5	1
Whooping Cough	...	...	...	1	3	7	0	1
Influenza	...	...	...	0	0	0	1	0
Diarrhoea	...	...	...	5	3	3	1	11
Enteritis	...	...	...	6	3	3	2	3
Septic Diseases	...	...	...	0	1	0	0	0
Phthisis	...	...	...	0	0	1	2	1
Other Tubercular Diseases	...	...	...	0	1	4	2	1
Bronchitis	...	...	...	10	6	12	8	6
Pneumonia	...	...	...	2	1	4	2	7
Premature Birth	...	...	...	18	8	15	19	15
Heart disease	...	...	...	0	2	0	1	0
Accidents	...	...	...	0	2	3	1	1
All other causes	...	...	...	21	25	37	26	23
Totals	...	...	...	64	55	91	70	70

THE CAUSES OF DEATH.

The causes of, and ages at, death during 1904 will be found in table IV. at the end of the report.

DEATHS FROM ZYMOTIC DISEASES.

The Zymotic death-rate is the rate caused by deaths from the seven principal zymotic diseases. They are as follows:—Small-pox, Measles, Whooping Cough, Scarlet Fever, Diphtheria Fever (Typhus, Enteric, and other Continued Fevers), and Diarrhœa.

During 1904 there were 13 such deaths in Torquay—one from Measles, two from Whooping Cough, three from Enteric Fever, and six from Diarrhœa.

The rate is equal to .38 per 1000 per annum, compared with .35 per 1000 in 1903. The Zymotic death-rate in England and Wales in 1904 was 1.94 per 1000 per annum, so that the rate for Torquay is remarkably low.

SMALL-POX.

Details given under notifiable diseases.

MEASLES.

Measles became epidemic in parts of the Borough in the latter half of the year. I first heard of it occurring in a private school, thence it spread, Upton National Schools being first attacked, necessitating the closure of the Infants' Department early in December. The boys' and girls' schools were kept open until the holidays, although the attendance was somewhat affected. Towards the end of December the Torquay National Schools were attacked, principally among the infants, but it was also found to be spreading quickly among the the Boys' and Girls' Departments, so that the whole school was closed for a week before the holidays. I cannot say that these precautions have had much effect on the epidemic.

Although those schools first affected on re-opening were found to be free from the disease, yet it has subsequently spread to other schools. Fortunately the disease has been mild, only one death being registered during the year. It is greatly to be regretted that the Board of Education will not now allow the attendance of scholars excluded on account of the disease. It

is very questionable whether any benefit is obtained by school closure, if the scholars attending the school live in close proximity to one another.

WHOOPING COUGH.

Just before Easter, many of the children attending the Torquay National Schools, Infants' department, were attacked by Whooping Cough. The attendance was greatly lowered, but the coming of the holidays rendered it unnecessary to close the school. When the school re-opened, the attendance was satisfactory. I heard of cases here and there for several months, but there was nothing like an epidemic. Two deaths were registered from this disease.

CHICKEN POX.

Cases occurred in various parts of the Borough. There were no deaths.

MUMPS.

In March, many cases of Mumps occurred among children attending the Chelston National School. Although many were affected, it soon passed away.

Diphtheria and Enteric Fever were dealt with under notifiable diseases.

INFLUENZA.

Influenza was the cause of one death.

DIARRHŒA AND ENTERITIS.

Six deaths were caused by Diarrhœa, all being children under five years of age. Enteritis caused nine deaths, six being infants. On the whole, the Borough keeps remarkably free from these diseases. It is probable that most of the cases that occur in infants here are due to injudicious diet, and as future mothers become better educated in the proper feeding of infants, the prevalence of such diseases will be reduced. It is certainly time that the teaching of hygiene should be compulsory in our elementary schools; and as a first step in this direction, all pupil teachers should be thoroughly instructed in elementary physiology and hygiene.

PHTHISIS AND TUBERCULAR DISEASES.

The number of deaths registered as being due to Phthisis was 53, of these twenty-two were visitors. As 12 of these deaths occurred in Public Institutions, they may be deducted as non-residents, leaving a total of 41, which gives a death rate 1·21 per 1000.

The rates per 1000 for the past five years are as follows:—

1904.	1903.	1902.	1901.	1900.
1·21	1·10	1·42	2·02	1·90

Other forms of Tubercular disease accounted for 12 deaths, three being those of visitors.

On the occurrence of a death from phthisis in a private house, a notice is sent to the occupiers, offering to fumigate the room with formaline free of cost.

During the year, by the instructions of the Sanitary Committee, the following leaflet of precautions was printed for circulation by workers of the Charity Organisation and others:—

BOROUGH OF TORQUAY.

CONSUMPTION OR PHTHISIS.

This disease is spread from the sick to those who are healthy, and the chief cause is the spit of the patient. It is essential for the sake of their families and friends that persons suffering from it shall take the following precautions:—

1. The patient must not spit anywhere except in a special vessel or cup containing a little water or disinfectant fluid. When outside a small wide-mouthed bottle, with a well fitting cork, or pocket spittoon (obtainable at any chemist's for a few pence) should be used. The spittoons and all other utensils used by patients should be scalded when emptied.
2. Handkerchiefs and all linen used by patients should be soaked for some hours in disinfecting fluid and then boiled before being washed.
3. The patient should sleep alone, and, if possible, with windows open. Fresh air and sunlight are nature's cures for this disease.
4. Sunlight is a powerful disinfectant, so that carpets, bedding, etc., which cannot be washed, should frequently be exposed to its rays.
5. In the sick room, small strips of carpet which can easily be removed should be used. The floor should be wiped over daily with disinfectant fluid, and all dusting done with a duster damped with the same.
6. All food which has been taken into the sick room should be thrown away if not consumed by the patient.

7. In case of death or removal of patient, the room should be disinfected, and afterwards, if possible, limewashed, or the paper removed before being thoroughly cleansed.

NOTE A.—Supplies of Disinfectants can be obtained free of charge at the Town Hall.

NOTE B.—When a room has to be disinfected after death or removal of the patient, a letter should be sent to the Town Hall. The work will be done free of charge.

In 1903 the Corporation adopted a bye-law prohibiting spitting in public buildings and carriages, etc.

CANCER, MALIGNANT DISEASE.

Cancer was responsible for 42 deaths. In 1903 there were 47, and 1902 35.

It must be borne in mind that in a health resort such as Torquay, cancer patients are frequently sent in the hope that the mild climate and bright sunshine may possibly prolong their lives. This materially increases the death-rate from this disease. Again, as I previously stated, no conclusion of any value can be deduced from a bare comparison between the death-rates of two populations very differently constituted as to age and sex. In a community such as Torquay, where the number of persons at advanced ages and of females is greater than that pertaining to the country as a whole, we expect to find a greater number of persons dying from cancer.

The death-rate from cancer in Torquay during 1904 was equal to 1·24 per 1000 of the population. If this rate is corrected for age and sex distribution, it would only be ·97 per 1000. The rate for England and Wales for 1902, the only figures at present published, is ·85 per 1000 of the total population.

AGE AND SEX DISTRIBUTION OF CANCER DEATHS.

	35—45	45 - 55	55—65	65—75	over 75	Totals
Males	1	2	6	8	1	18
Females	5	0	8	5	6	24
Total	6	2	14	13	7	42

In the following table the chief headings under which deaths from cancer occur are given :—

REGISTERED DEATHS FROM CANCER (MALIGNANT DISEASE).

Seat of Disease.	Sarcoma.		Carcinoma.		Malignant Disease or Cancer.		Total.
	M.	F.	M.	F.	M.	F.	
Neck, Throat, Tonsils, Larynx ..	1	—	3	—	1	1	6
Oesophagus	—	—	—	—	1	—	1
Breast	—	—	—	3	—	4	7
Stomach and Pylorus ..	—	—	1	2	4	1	8
Liver and Gall Bladder ..	—	—	2	—	—	2	4
Pancreas	—	—	1	1	1	—	3
Intestines (excluding Rectum) ..	—	—	—	1	1	1	3
Rectum	—	—	1	1	—	1	3
Uterus	—	—	—	3	—	2	5
Arm, Wrist, Hand	—	—	—	—	—	—	—
Parts unspecified	—	—	1	—	—	1	2
Totals	1	0	9	11	8	13	42

SANITARY WORK, 1904.

There have been no changes in the staff of the Sanitary Department during the year. Full details of the work of the Inspectors are contained in their reports, which are appended.

COMBINED DRAINS.—Several times during the year the vexed question has cropped up as to whether a combined drain was a drain or a sewer. The Sanitary Committee have consistently held that any drain taking the drainage of several houses, which passed through private property and which was solely for the use of those houses, was a drain and not a sewer vested in the Local Authority. This opinion has now been confirmed in the Court of Appeal by the result of the cases of *Thompson v. The Eccles Corporation*, and *Haedicke v. The Friern Barnet Urban District Council*. One important point decided there was, that in the event of a nuisance arising from defects or obstructions in a combined drain, the person on whose property the nuisance occurred was responsible for its abatement.

POLLUTION OF STREAM.

An inspection of the sanitary conveniences for the use of workmen in the goods department at Torre Station showed that the sewage was discharged direct into the stream which runs in a culvert from there to the Rosery grounds, and thence through the Recreation Grounds to discharge into Torbay. Notice was served on the Company, who replied that they considered that this culvert was a sewer, as they knew that several houses discharged their sewage directly into it. It was necessary, therefore, to examine the drainage of the houses along the route, when it was discovered that this was the case with our premises. After notice the owners altered their drains and connected them to the sewer. The Railway Company are now taking steps to provide proper sanitary accommodation at their yard.

SLAUGHTER HOUSES.

There are seven slaughter-houses in the Borough. Four are registered, one has a perpetual license, while two require to be licensed each year.

I have inspected them several times during the year, and in November submitted a detailed report. The result of which was that the Council agreed to the Sanitary Committee's recommendation to adopt the Local Government Board's Model Bye-laws, which will considerably strengthen the hands of your officers. In a few of the slaughter-houses at the present time, sufficient care is not taken to clean the apparatus used in slaughtering, with the result that the blood becomes so hardened on it that it is almost impossible to remove. Again, fat and hides are kept too long on the premises. The bye-laws will secure more dispatch in cleansing, and will ensure the regular hosing down of the premises. I reported that I considered the position of one slaughter-house in Babbacombe most objectionable. It lies in a narrow street, quite surrounded by houses, and close to the schools. As this is a registered slaughter-house, and as the owner keeps it clean, it is impossible to abolish it.

The fact of having so many private slaughter-houses, and also that a considerable amount of meat is brought in from a distance by train, renders the proper inspection of meat impossible.

There are two slaughter-houses situated just outside the Borough boundary, over which we have no control. Twice

during the year trouble has arisen from the abominable smell caused by spreading the slaughter-house manure from one of these.

UNSOOUND FRUIT.

In July 2 cases with baskets of strawberries were seized. As the fruit was found to be quite decomposed, a Magistrates' order was obtained for its destruction.

SALE OF FOOD AND DRUGS ACT.

Samples are taken by the County Police. The following is a summary of their action under the Act :—

Article.	No.	Result of Analyses.	Remarks.
Beer	6	Genuine	11 samples of milk were found not genuine. Proceedings were taken in six cases where the milk contained added water, or deficient in milk fat.
Brandy	2	"	
Bread	6	"	5 defendants were convicted and one dismissed.
Butter	11	"	
Gin	1	"	5 samples were not genuine, and vendors were cautioned :—
Milk	43	32 genuine	
Rum	1	Genuine	Deficient in milk fat to the extent of 5% ; Boracic acid, 8.69 grains to the pint of milk ;
Sugar	6	"	Deficient in milk fat 5 % ; Boracic acid, 7½ grains per pint of milk ;
Whisky	2	"	Milk contained 5 % added water.
Total	78		Milk was the only article adulterated.

The fact that boracic acid was being used as a milk preservative was reported to the Sanitary Committee, who instructed me to draw up and distribute to the dairy farmers and milk dealers the following circular, as a warning :—

To Dairymen and Milk Purveyors.

The attention of the Sanitary Committee of the above Council has been drawn to the fact that during the past year the Public Analyst has reported that preservatives, in varying amounts, have been found in samples of milk taken by the County Police for analysis. They, therefore, desire to warn Dairymen and Milk Purveyors against the use of preservatives,

and to point out that they are liable to heavy penalties for so adulterating milk. The Birmingham and other Sanitary Authorities have recently obtained convictions against dairymen for using preservatives. There is no doubt that milk containing preservatives is injurious to health, especially to infants and invalids, who subsist almost entirely upon milk. The principal reason why milk quickly decomposes, is that it has become fouled with extraneous matter during the process of milking. If care and scrupulous cleanliness is observed by milkers, with regard to their hands and the udders of the cows, there would be no necessity to use preservatives, as milk would easily keep for a sufficient time. There is little use in exercising the great cleanliness that is observed in most dairies, if the milk is polluted before it reaches there.

MILK.

The system of inspecting both the cowsheds and dairies in the Borough, and also the outside dairy farms from which many dealers receive their supply, is carried out twice a year. Particulars are obtained of the condition of the cowsheds as to cleanliness, lighting, ventilation, and paving; the washing of milk vessels; cleanliness of dairies, etc.; the water supply as regards its freedom from pollution; and the number and condition of the cows being milked.

After these inspections a complete register is compiled of all dairies and cowsheds in the Borough, together with the farms outside which supply them with milk, etc. This register is printed in the form of a bill, and is posted up throughout the town, copies being forwarded to all dairymen and farmers concerned. Such bills are a guarantee that we are satisfied with the sanitary state of the places inspected, and is in force for six months. Thus two thorough inspections are made each year. It is satisfactory to be able to report that the farmers meet us with every courtesy, and endeavour to carry out any improvements that are suggested. The dairies everywhere are beautifully kept, and there is a noticeable improvement in the condition of the cowsheds. Cowsheds, which in the past rarely saw a white-wash brush, are now limewashed twice a year; cobble paving, which is almost impossible to keep clean, has in many places been replaced by brick paving. It must also be remembered that in South Devon, for the greater part of the year, the cows are kept out night and day, only being brought in at night from the middle of December to the end of March, so that the animals live under the best conditions possible,

It is to be regretted that although improvement is taking place in the proper housing of cows, yet there is little change in the method of milking. Most of the milking is done by men and boys, who in most instances come straight from the work they are at without any idea of washing their hands before beginning, and it is seldom that attention is given to the teats and udders of the cows, which are often soiled with excrement. Milking appears to be an operation in which speed is the great consideration, little regard being paid to cleanliness. Too much faith is put in the fact that the milk is strained. Of what use is this if the milk contains a solution of the substance that has fouled it? Dairy farmers seem to have little idea how easy it is for milk to become contaminated and thus cause an immense amount of sickness, especially among children. Could not the teachers of our County Councils, when giving lessons in dairy work, endeavour to preach cleanliness in the cowsheds as well as in the dairies?

The recent legal decision in the case of *Frost v. the Aylesbury Dairy Company* puts a serious responsibility upon Milk Dealers. In this case, the plaintiff sued for the expenses he had been put to, by reason of the death of his wife from Typhoid fever, alleged to have been caused by the milk supplied by the defendant Company. It was proved that a number of cases were attributed to the use of this milk, and that, at one of the farms supplying this Company, three cases had previously occurred, and that the water used there was polluted. The Jury gave a verdict for plaintiff with damages of £106, as claimed.

There are 91 registered dairymen and cow-keepers in the Borough who receive milk from 63 farms situated outside the District.

ICE CREAM TRADE.

There are three manufacturers of ice cream in the town. They were all inspected, and were found to be clean and well looked after.

OFFENSIVE TRADES.

Tripe boiling is the only offensive trade carried on in the Borough. One building is situated in Upton, and is always found in a clean and satisfactory condition. Towards the end of the year, it was discovered that tripe boiling was being carried on in a shed near Hele. The owner pleaded ignorance of the

necessity to have permission, and at once applied for it. Inspection showed that the premises, in their then condition, were not satisfactory. The owner was informed that, unless they were rendered suitable or the trade given up within a month, he would be prosecuted for carrying on the trade without permission.

COMMON LODGING HOUSES.

There are five registered Common Lodging Houses, two more than last year. These two, although in existence for some years, had not been registered, through some misunderstanding as to the character of the lodgers and the amount of payment made. They are undoubtedly common lodging-houses, and as such the owners were called upon to have them registered. I have inspected them several times, and on the whole found them fairly satisfactory.

HOUSING OF THE WORKING CLASSES.

There appears to be little evidence of overcrowding in the Borough. Four suspected cases were investigated, but in only one was there found to be any overcrowding. This was abated. In one instance a man was found to be occupying an old work-room as a dwelling house; it was found on inspection to be quite unfit for human habitation. Notice was served on the owner, who closed the place at once. On the whole, it may be said that the members of the working classes are satisfactorily housed.

FACTORY AND WORKSHOPS ACT.

Each Inspector visits the premises in his district under the above Act, and details of these inspections will be found in their reports. The results of this combined action will be found in the table issued by the Secretary of State. I have on numerous occasions accompanied the Inspectors on their rounds.

BAKEHOUSES.

There are 57 bakehouses on the register, each of which I inspected. In my last report, I stated that there was only one bakehouse for which a certificate was granted; during the year alterations and enlargements were carried out in another, which resulted in the *absorption* of the yard area, and practically turned

the premises into an underground bakehouse. As I considered the place much improved by the alterations, a certificate of fitness was granted. There is little to complain of in the way the bakehouses are kept, and linewashing is regularly carried out.

OUTWORKERS.

Very little work is done by outworkers. Lists of these were obtained, and in most instances it was found that some of the work of large tailors was done by men in a small way of business on their own account, and that their premises had been inspected and were on our lists.



FACTORY AND WORKSHOPS ACT, 1901.

Factories, Workshops, Laundries, Workplaces, and Homework

1.—INSPECTION.

DURING INSPECTIONS MADE BY SANITARY INSPECTORS OR INSPECTORS OF NUISANCES.

Premises.	Number of		
	Inspections.	Written Notices.	Prosecutions.
Factories (including Factory Laundries)	10		
Workshops (including Workshop Laundries)	239	54	Nil
Laundries	36		
WORKERS' PREMISES	20		
Total	305	54	Nil

2.—DEFECTS FOUND.

Particulars.	Number of Defects.			Number of Prosecutions.
	Found.	Remedied.	Referred to H.M. Inspector.	
<i>as under the Public Health Acts:—</i>				
Deficiency of cleanliness	41	36	0	0
Deficiency of ventilation	1	1		
Crowding	2	2		
Deficiency of drainage of floors	2	2		
Nuisances	3	3		
Sanitary accommodations { insufficient	3	3		
{ unsuitable or defective				
{ not separate for sexes				
<i>under the Factory & Workshop Act:—</i>				
Occupation of underground bake-houses (S. 101)				
Deficiency of special sanitary requirements for houses (SS. 97 to 100)				
Deficiency as regards lists of outworkers (S. 107)				
Dirty work to be done in premises { unwholesome (S. 108)				
{ infected (S. 110)				
Requirement of wearing apparel to be made in premises infected by scarlet fever or diphtheria (S. 109)				
Offences				
Total	52	47	Nil	Nil

including those specified in Sections 2, 3, 7, and 8 of the Factory Act as remediable under the Public Health Acts.
 Section 22 of the Public Health Acts Amendment Act, 1890, has been adopted.

3.—OTHER MATTERS.

Class.		Number.
Matters notified to H.M. Inspectors of Factories :—		
Failure to affix Abstract of the Factory and Workshop Act (S. 133)	.. .. .	
Action taken in matters referred by H.M. Inspectors as remediable under the Public Health Acts, but not under the Factory Act (S. 5)	Notified by H.M. Inspector Reports (of action taken) sent to H.M. Inspectors	1 1
Other .. .. .	.. .. .	
Underground Bakehouses (S. 101) :—		
In use during 1903	.. .. .	2
Certificates granted	{ in 1903 in 1904	2
In use at the end of 1904	.. .. .	2
Homework :—		Number of
Lists of Outworkers* (S. 107) :—		Lists. Outwork.
Lists received .. .. .	.. .. .	18 40
Addresses of outworkers	{ forwarded to other Authorities received from other Authorities	
Homework in unwholesome or infected premises :—		Wearing Apparel. Other.
Notices prohibiting homework in unwholesome premises (S. 108)	.. .. .	
Cases of infectious disease notified in homeworkers' premises		Nil Nil
Orders prohibiting homework in infected premises (S. 110) ..		
Workshops on the Register (S. 131) at the end of 1904.		
Important classes of workshops, such as workshop bake-houses, may be enumerated here.	{	
Total number of workshops on Register (including homeworkers' premises)	..	305

* The Lists should be received twice in the year. The year's figures required in Table are then obtained by adding together the two half-yearly totals.

YEAR.	Population estimated to Middle of each Year.	BIRTHS.		Total Deaths Registered in the District.				TOTAL DEATHS IN PUBLIC INSTITUTIONS IN THE DISTRICT.	Deaths of Non-Residents registered in Public Institutions in the District.		Deaths of Residents registered in Public Institutions beyond the District.		NET DEATHS AT ALL AGES BELONGING TO THE DISTRICT.		
		Number.	Rate.*	Under 1 year of age		At all ages.			In the District.	In the District.	Number.	Rate.*	11	12	13
				Number.	Rate per 1,000 Births registered.	Number.	Rate.*								
1	2	3	4	5	6	7	8	9	10						
1895.	33100	652	19.6	102	155	583	17.6	41	55		528	15.9			
1896.	33200	650	19.5	107	163	569	17.1	43	41		528	15.9			
1897.	33300	630	18.9	81	128	502	15.0	43	83		419	12.5			
1898.	33400	626	18.7	83	132	529	15.5	53	70		459	13.7			
1899.	33500	573	17.0	84	143	570	17.0	31	49		529	15.5			
1900.	33600	559	16.6	70	124	488	14.5	41	58		430	12.8			
1901.	33625	556	16.5	70	125	504	15.0	51	28		476	14.1			
1902.	33625	540	16.0	84	155	529	15.7	63	38		491	14.6			
1903.	33800	536	15.9	51	95	455	13.4	57	28	21	448	13.3			
Averages for years 1895-1903.	33461	591	17.6	81	135	525	15.6	47	50		478	14.2			
1904.	33850	530	15.7	64	120	473	13.9	42	20	29	482	14.2			

* Rates in columns 4, 8, and 13 calculated per 1,000 of estimated population.

* Rates in columns 4, 8, and 13 calculated per 1,000 of estimated population.

NOTE.—The deaths to be included in Column 7 of this table are the whole of those registered during the year as having actually occurred within the district or division. The deaths to be included in Column 12 are the number in Column 7, corrected by the subtraction of the number in Column 10 and the addition of the number in Column 11.
 By the term "Non-residents" is meant persons brought into the district on account of sickness or infirmity, and dying in public institutions there; and by the term "Residents" is meant persons who have been taken out of the district on account of sickness or infirmity, and have died in public institutions elsewhere.
 The "Public Institutions" to be taken into account for the purposes of these tables are those into which persons are habitually received on account of sickness or infirmity, such as hospitals, workhouses, and lunatic asylums.

TABLE II.

VITAL STATISTICS OF SEPARATE LOCALITIES IN 1904.

LOCALITIES.	Population Census 1901.	Births regis- tered.	Deaths at all Ages.	Deaths under 1 year.
Torre	3851	50	51	5
Waldon	3576	42	45	4
Upton	4339	92	84	13
Ellacombe	5911	124	82	16
Strand	3129	51	50	11
Torwood	3644	21	51	2
St. Mary-Church ...	3312	47	49	6
Babbacombe	3264	63	36	4
Chelston	2599	34	25	3
The Borough	33625	524	473	64

TABLE III.

CASES OF INFECTIOUS DISEASE NOTIFIED DURING THE
YEAR 1904.

IFIABLE DISEASE.	Cases notified in whole district.							Total cases notified in each locality.							No. of cases removed to hospital fr'm each locality											
	At all ages.	At Age†—Years.						Torre	Waldon	Upton	Ellacombe	Strand	Torwood	S. Marych.	Bab'mbe	Chelston	Torre	Waldon	Upton	Ellacombe	Strand	Torwood	S. Marych.	Bab'mbe	Chelston	
		Under 1	1 to 5	5 to 15	15 to 25	25 to 65	65 and upwards																			
Ill-pox ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
lerna ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
nteria ..	4	—	—	3	1	—	—	—	1	—	1	—	—	1	—	1	—	1	—	1	—	—	—	—	—	—
ibrinous croup	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ipelas ..	3	—	—	1	—	2	—	1	—	—	2	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—
let fever ..	28	—	9	16	2	1	—	—	1	6	6	1	1	2	2	8	1	5	4	—	1	2	2	6	—	—
hus fever ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
erie fever ..	9	—	1	2	2	4	—	—	1	5	—	1	1	—	—	—	—	5	—	1	—	—	—	—	—	—
psing fever ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
inned fever ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
peral fever ..	1	—	—	—	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ne ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Totals ..	45	—	10	22	6	7	—	3	3	11	9	2	3	3	2	9	1	2	10	5	1	1	2	2	6	—

NOTES.—The localities adopted for this table should be the same as those in Tables II. and IV.

* This space may be used for record of other disease the notification (compulsory or voluntary) which is in force in the district.

† These age columns for notifications should be filled up in all cases where the Medical Officer, health, by inquiry or otherwise, has obtained the necessary information.

Isolation Hospital:—Newton Abbot Road, outside the Borough.

TABLE IV.

CAUSES OF, AND AGES AT, DEATH DURING YEAR 1904.

CAUSES OF DEATH.	DEATHS AT THE SUBJOINED AGES OF RESIDENTS OCCURRING IN OR BEYOND THE DISTRICT							Total Deaths whether of Residents or non Residents in Public Institutions in the District
	All ages.	under 1	1 and under 5	5 and under 15.	15 & under 25.	25 & under 65.	65 & upwards	
Small-pox	—	—	—	—	—	—	—	—
Measles	1	1	—	—	—	—	—	—
Scarlet Fever	—	—	—	—	—	—	—	—
Whooping-cough	2	1	1	—	—	—	—	—
Diphtheria and Membranous croup	1	—	—	1	—	—	—	—
Croup	—	—	—	—	—	—	—	—
Fever { Typhus	—	—	—	—	—	—	—	—
{ Enteric	3	—	—	1	—	2	—	3
{ Other continued	—	—	—	—	—	—	—	—
Epidemic influenza	1	—	—	—	—	—	1	—
Cholera	—	—	—	—	—	—	—	—
Plague	—	—	—	—	—	—	—	—
Diarrhoea	6	5	1	—	—	—	—	—
Enteritis	9	6	—	—	—	3	—	—
Puerperal fever	—	—	—	—	—	—	—	—
Erysipelas	—	—	—	—	—	—	—	—
Other septic diseases	3	—	—	1	1	—	1	2
Phthisis	46	—	—	1	9	32	4	13
Other tubercular diseases	12	—	3	2	2	5	—	1
Cancer, malignant disease	42	—	—	—	—	22	20	1
Bronchitis	39	10	4	1	1	10	13	3
Pneumonia	19	2	5	—	—	6	6	—
Pleurisy	—	—	—	—	—	—	—	—
Other diseases of respiratory organs	5	—	—	—	—	1	4	—
Alcoholism	—	—	—	—	—	—	—	—
Cirrhosis of liver	5	—	—	—	—	5	—	1
Venereal diseases	—	—	—	—	—	—	—	—
Premature birth	18	18	—	—	—	—	—	—
Diseases and accidents of parturition	—	—	—	—	—	—	—	—
Heart diseases	29	—	—	—	2	13	14	1
Accidents	11	—	1	3	1	4	2	6
Suicides	1	—	—	—	—	1	—	1
All other causes	229	21	7	1	5	59	136	10
All causes	482	64	22	11	21	163	201	42

BOROUGH OF TORQUAY.

SANITARY INSPECTORS' REPORTS.

CHIEF SANITARY INSPECTOR'S REPORT.

TOWN HALL CHAMBERS,
January 31st, 1906.

*To the Mayor, Aldermen, and Councillors of the
Borough of Torquay.*

GENTLEMEN,

I have the honour to make my Twenty-Seventh Annual Report to the Urban Sanitary Authority.

HOUSE INSPECTION.

The work has been of the customary nature, namely, visiting premises upon complaint, or of sickness in same, or at request for sanitary reports.

These latter were twenty in number, whilst there were twenty-eight other houses entitled to similar Certificates by reason of the sanitary works having been carried out satisfactorily, and the tradesmen who did the work or the owners of the property asked for official approval—in many instances tradesmen had machines of their own and had applied them, with the result that the final tests were generally satisfactory.

DRAIN TESTS.

Smoke and Water, as well as Chemical tests, to the number of 267, were applied, or thirty-two in excess of that for 1903.

HOTELS AND SCHOOLS.

The entire sanitary arrangements of the two largest Hotels were overhauled and tested, one occupying nearly a week, on account of the elaborate system requiring careful and sectional testing.

I am glad to state that, although several years had elapsed since the modern systems were installed, only very trifling faults were discovered, which when properly remedied the desired Certificates were granted.

Similarly, the arrangements of three private Schools were examined and tested, ostensibly with a view to Secondary Education, having the approval of the County Council, being established. These also needed little reform, and were duly certified.

TORRE PARISH ROOMS.

Owing to continued illness in the caretaker's family at Torre Parish Rooms, I was requested to investigate the sanitary system, and I found very serious defects under the living apartments; also all the rain pipes round the building were directly connected with the sewers in the roads outside, and thus permitted sewer gas to escape under the eaves and close to open windows.

The authorities in charge duly received a detailed report of requirements, and forthwith proceeded to carry out my recommendations. All were executed and tested at various stages, and were finally certified.

DILAPIDATED HOUSES.

A small court of very dilapidated houses at Torre demanded special attention, as it was rapidly approaching a condition when the houses might be condemned as unfit for habitation. I communicated with the owner, and the result is a better appearance outside and in, and they are now fairly comfortable cottages for the labouring class.

DETAILS OF OPERATIONS.

An analysis of the various structural work done manifests the following details executed in the three hundred and ninety-eight premises visited, these being situate in the Torre, Waldon, and Chelston Wards chiefly.

- 54 New Sanitary Conveniences and water supply fixed.
- 39 Soil pipes were fixed outside and ventilated.
- 55 Intercepting Traps, with fresh air inlets; also Inspection Chambers to same; besides
- 46 Additional ditto at junctions or suitable places.

- 61 New sets of house drains were laid.
- 14 Masonry drains abolished.
- 7 Back yards were paved and drained.
- 10 New Water Taps from the main pipe were fixed.
- 76 Premises were limewashed and disinfectants supplied.
- 7 Ashbins provided.
- 34 Offensive accumulations were removed.
- 6 Nuisances from keeping of animals or fowls abated.
- 99 Gully Traps were fixed.
- 29 Fumigations after Infectious Diseases or Phthisis took place.

NEW BUILDINGS.

The New Buildings erected during 1904 numbered thirty-three, or five more than in the previous year, mostly of the artizan type, and situate in Torre and Chelston.

FACTORIES AND WORKSHOPS : BAKEHOUSES.

The number of these has diminished, and are classified as follows :—

- 23 Dressmakers and Milliners.
- 11 Plumbers and Painters.
- 8 Coachbuilders, Cycle Works, and Smiths.
- 9 Tailors.
- 6 Laundries.
- 8 Builders and Carpenters.
- 5 Saddlers and Harness Makers.
- 2 Printers.
- 3 Watchmakers, and
- 19 Bakehouses.

Much improvement in cleanliness, and of the general sanitary arrangements in the majority of these places was observed, but a few need frequent visits to ensure limewashing, etc.

MILKSHOPS AND DAIRIES.

The Milkshops and Dairies under my charge have been inspected, and were found in good condition ; also seven farms in Cockington outside the Borough were visited, and with one exception were found quite satisfactory.

SANITARY CONFERENCE AT BOURNEMOUTH : VISIT TO TORQUAY.

Although not a part of regular Sanitary work, I beg to report having attended, as your delegate, the Annual Conference of the Sanitary Inspectors' Association, which was held at Bournemouth in September last, and which was instructive in many ways by the

contribution and discussion of valuable papers on Sanitary subjects by members, including a very fine address from the President, Sir James Crichton Browne, M.D., F.R.S., LL.D., &c. Not the least pleasing feature of the meeting was a visit to Torquay, on 13th September, by over one hundred Inspectors from all parts of England, together with the President, the Mayor and Mayoress of Bournemouth, and notables from that town. The President seized the opportunity to eulogise Torquay from a sanitary standpoint, after a tour of the Borough.

The party were handsomely entertained by the late Mayor and Mayoress, and the cordial thanks of the Association are recorded in the proceedings.

I respectfully desire to thank the Council for the honour done of sending me to the Congress, and beg to remain, Mr. Mayor and Gentlemen,

Yours obediently,

CHARLES MACMAHON,

*Cert. San. Inst. ; Assoc. M.B.I. Pub. Health ;
Chief Sanitary Inspector.*

ASSISTANT SANITARY INSPECTOR'S REPORT.

*To His Worship the Mayor, the Aldermen, and Councillors
of the Borough of Torquay.*

GENTLEMEN,

I have the pleasure of making this my Seventh Annual Report to the Council for the year ending December 31st, 1904, and dealing with that portion of the Borough assigned to me, *viz.*, the wards of Torwood, Strand, Upton, and Ellacombe.

One hundred and forty houses and premises have been visited and inspected on receipt of complaint, or by request, and twenty-two smoke and twenty-four hydraulic tests applied to the drains in various instances.

One hundred and five notices were served to abate nuisances, and of these eighty were preliminary and twenty-five legal.

In three instances the drains from houses were opened and examined by the Council under Section 41 Public Health Act, and in all three cases the drains were found to be in a defective condition.

One hundred and ten visits of inspection were made to premises where work was in progress, and also one hundred smoke and eighty-two hydraulic tests applied to the drains after alterations to same.

Upon application for Sanitary Certificates, twenty-five houses and premises have been examined and reported upon, and on completion of the necessary work to comply with the requirements laid down by the Council, the certificates were granted in twenty-three instances.

The 10s. testing fee has been paid in each case, a total of £12 10s.

Certificates have also been granted in three other instances, where on complaint or illness the drainage work has been carried out to meet the requirements for a Certificate.

In connection with this work, fifty-seven smoke and fifty-eight hydraulic tests were made, and twenty-eight visits of inspection while work was in progress.

1

In the early part of the year the drains and sanitary arrangements of Torbay Hospital were examined and tested, and a full report made to the Hospital board on its sanitary condition; the whole of the recommendations embodied in the report were not carried out, but several sections of new drains were laid, which after numerous tests were left in a sound condition.

Also, at the end of the year, the entire sanitary arrangements of St. James's School, Upton, were examined and tested, and as a result it was found necessary to retrain the premises; this work was carried out during the Christmas holidays.

In connection with the new buildings in my district, fifty-two smoke and four hydraulic tests were applied to the drains of thirty houses and premises, and forty-eight visits of inspection made.

Twenty-one houses were examined for occupation.

SUMMARY OF STRUCTURAL WORK.

- 57 New sets of house drains laid.
- 6 Old masonry drains found and abolished.
- 34 Intercepting traps, with fresh air inlets fixed.
- 82 Inspection chambers to drains built.
- 27 New sanitary conveniences with water supply fixed.
- 43 Soil pipes fixed outside houses and ventilated.
- 60 Iron and brick traps removed and earthenware gullies fixed—
- 7 Old pan closets removed.
- 9 Water supplies laid on to w.c.'s found to be without.
- 17 Taps with water supply direct from main fixed.
- 5 Choked drains cleared.
- 59 Waste pipes from baths, lavatories, and sinks trapped.
- 21 Ashbins for house refuse provided.
- 20 Offensive accumulations removed.
- 6 Nuisances from keeping fowl and animals abated.
- 25 Dirty premises limewashed and cleaned.
- 7 Nuisances from stables and manure pits abated.
- 2 Workshops, without a means of drainage, drained.
- 1 Premises closed as unfit for habitation.
- 39 Premises disinfected.
- 3 Defective yards paved.

Total 530

During the year a great amount of time has again been occupied in connection with the inspection and examination of premises under the Factory and Workshops Act.

The inspection includes the following :—

Description of Trade.	Number.	No. of workrooms or workplaces.
Laundries	27	50
Dressmaker and Milliner	21	34
Corset Maker	1	1
Tailors	13	16
Bootmaker	3	3
Saddler and Harness Maker	6	6
Sailmaker	2	2
Coachbuilder	1	3
Wheelwright	1	2
Shoeing Smith	2	2
Wood Turner	1	1
Upholsterer and Cabinet Maker	5	17
Printing Works	3	8
Plumbers	11	11
Painters and Decorators	10	10
Builders	8	22
Watchmakers and Jewellers	4	4
Dye Works	1	1
Photographers	2	4
Picture Framers	1	1
Blind Maker	1	3
Umbrella and Trunk Maker	2	2
Marble Masons	2	2
Cycle Works	3	7
Electro-plate Works	1	1
Quarries	5	5
Ironmonger and Iron Founder	2	6
Bakers and Confectioners	21	21
Total ...	160	245

In connection with this work, two hundred and forty-five work rooms, workshops, and work places have been visited and examined, and one hundred and sixty premises, and twenty-five notices given to remedy the following defects :—

Defects.			Notice .
Want of Limewashing and Cleansing	...	...	17
„ Drainage	...	...	2
Overcrowding	...	...	2
Defective W.C.	...	...	1
Inadequate Ventilation	...	...	1
Total			23

During the month of May, and again in October, I have made the half-yearly inspection of forty-six Dairies, Milkshops, and Cowsheds in my district ; in several instances it was necessary to enforce limewashing, but in other respects the places were found in a satisfactory condition.

Also during May, and again in December, the Dairies and Cowsheds on thirty-two farms outside the Borough have been visited and examined with the Medical Officer in regard to the supply of milk, etc., into the town.

It is gratifying to note the marked improvement which has gradually taken place in the cleanliness and general condition of the Cowsheds since this work was undertaken.

In connection with Common Lodging Houses, during the year four of these premises have come under my supervision, and have been visited from time to time. In two instances the keepers of houses were found to be unregistered, and were called upon to do so ; this they complied with.

At one house old stone drains were found and abolished, and new pipe drains laid.

In all the houses new room tickets, stating the cubic space and number of persons allowed, have been fixed in each of the registered rooms.

In one instance, where overcrowding was reported by the Police, a letter of warning was sent to the keeper of the house.

As in former years, the premises occupied by the French onion hawkers have been visited and inspected from time to time. In one instance overcrowding was taking place ; this was abated upon verbal notice.

The Public Slaughter House in Parkfield Road, within my district, has been regularly visited, and I regret to say that it has *not* always been found in a satisfactory condition.

In connection with disinfection, twenty-two rooms in various houses have been disinfected after

- 8 Scarlet Fever,
- 2 Enteric,
- 1 Measles,
- 1 Whooping Cough, and
- 8 Phthisis

ses, and in one instance the drains of a house were upon amination and testing found in a defective condition.

As previously pointed out, the disinfection of rooms after ses of Phthisis is optional with the occupiers, and though in every instance offers are made to disinfect, too often this is either fused or ignored.

The following comparative table for the last five years will ew the result of this work in my district :—

Year.	No. of cases.	No. of disinfections.	Refusals.
1900	42	20	22
1901	45	14	31
1902	25	9	16
1903	12	0	12
1904	20	8	12
Total ...	144	51	93

No regular house-to-house inspection has been made in my strict during the past year, owing to the amount of time occupied connection with the inspection of workshops, and increase of ork in other directions.

Office work, as usual, has demanded a certain amount of time regard to the keeping of the necessary books and records of ork, and in correspondence.

I am, Mr. Mayor and Gentlemen,
Yours obediently,

WILLIAM B. WATSON,

*Cert. San. Inst., Sanitary Inspector ;
Inspector of New Buildings, Factory and Workshops,
Dairies, Cowsheds, & Milkshops, etc.*

ASSISTANT SANITARY INSPECTOR'S REPORT.

*To His Worship the Mayor, Aldermen, and Councillors of
the Borough of Torquay.*

GENTLEMEN,

I beg to present to you my Fourth Annual Report, which records the work done in the St. Mary-Church district during the year ending 31st December, 1904.

COMPLAINTS.

Fifty-eight different premises were visited on receiving various complaints. The following summary shows the various heads under which these can be grouped :—

Drains	27
Keeping of animals	13
Offensive deposits ...	8
Damp and dirty premises	4
Trades and manufactures	4
Overcrowding	2

The appended table enumerates the several improvements carried out to abate the nuisances found on investigating these complaints :—

Drains relaid or repaired	13
Choked drains cleared	11
Animal nuisances abated	9
Offensive deposits removed	8
Premises cleaned and repaired	4
Trade nuisances abated	3
Overcrowding abated	2

A total of one hundred and forty-three visits to premises, nineteen smoke tests, and five water tests were made in connection with these complaints.

PREMISES VISITED ON REQUEST.

Twenty-nine premises were inspected at the request of owner or occupier, or in consequence of repairs or alterations to the drains.

In twenty-three of these houses defects were found. Ten drains were entirely relaid, and thirteen were thoroughly repaired. In eleven instances the fee of ten shillings was paid.

Thirteen sanitary certificates were granted. In superintending these operations eighty-four smoke tests were applied, and ninety-one visits to premises were made.

INFECTIOUS AND OTHER DISEASES.

Five dwelling-houses were visited in consequence of infectious diseases occurring therein. Three were scarlet fever, one diphtheria, and one typhoid fever. Five rooms were disinfected, and one defective drain was relaid. This compares very favourably with the preceding year, when nineteen premises were inspected on account of Infectious Diseases.

Seven deaths from Phthisis and Tuberculosis were reported. Two other houses, in which persons suffering from these complaints had resided, were disinfected. Eight rooms were disinfected, and five were limewashed or repapered.

NEW BUILDINGS.

Eighteen new buildings were visited during the year. One school and one dwelling-house were also inspected in consequence of additions being built to the same. The majority of new buildings were erected in Babbacombe district. The drainage of these buildings was smoke tested in sections. On completion a final inspection was made in all cases, prior to granting the Habitation certificate. Thirteen drainage and thirteen habitation certificates were issued.

Smoke tests were applied in sections to about three hundred and fifty feet of new sewer, laid by the owners of a building estate in St. Mary-Church, to receive the drainage of the houses to be built thereon.

A total of fifty-eight visits of inspection and sixty-three applications of the smoke test were made in connection with new house drains and sewers.

HOUSE-TO-HOUSE INSPECTION.

Under this section, eighty-three premises at Hele, Babbacombe and St. Mary-Church were visited. In sixty-seven cases the drains were smoke tested, and in twenty-seven instances defects were found. Thirteen of these houses were visited as recently as December, and consequently the work of redraining the same was in hand at the end of the year, and will be included in the next report.

The improvements effected in consequence of this systematic inspection may be summarised thus :—

Drains relaid or repaired	...	...	14
New wash down pans fixed	...	...	14
New flush cisterns fixed to water closets			11
Flush cisterns cleaned and repaired	...		6
Premises cleaned and limewashed	...		15

One hundred and fifty-seven visits of inspection, one hundred and four smoke tests, and seven water tests were made in respect of these house-to-house inspections.

DAIRIES, COWSHEDS, AND MILKSHOPS.

There are thirty dairies and milkshops, and twenty-five cowsheds situated in the St. Mary-Church and Babbacombe District. They were inspected twice during the year. In a few instances it was necessary to draw attention to the limewashing of the cowsheds. On again visiting these sheds it was found that this requirement had been fulfilled. One cowshed was redrained, and a supply of town water laid on.

Twenty-two dairy farms situated at Dacombe, Stoke-in-Teignhead, Shiphay, Edginswell, Coffinswell, Rocombe, and Coryton were visited, with the Medical Officer of Health, in June, and again in December. They were found in a very creditable condition. One old cowshed was pulled down and replaced by a well-built brick structure during the year. Large quantities of milk and cream are sent daily from these extramural farms to dealers within the Borough of Torquay.

SLAUGHTER HOUSES.

The six slaughter houses situated in this district were periodically visited during the year, and were found to be up to the usual standard of cleanliness.

BAKEHOUSES.

The seventeen retail bakehouses situated in this portion of the Borough were inspected by the Medical Officer of Health and myself during the year. In only three cases was it found necessary to require the premises to be limewashed. One water closet, which *was found to be* without means of flushing, was supplied with a *water waste preventer*.

FACTORY AND WORKSHOPS ACT, 1901.

Under this heading seventeen Laundries and eighteen Tailor and Dressmaker work-rooms were inspected during the year. Six intimation notices were served to abate nuisances found on these inspections. Six Laundries and Washhouses were limewashed, and the floor of one was repaired in compliance with the notices above referred to.

I am, Mr. Mayor and Gentlemen,

Yours obediently,

H. RUSSELL SMITH, C.S.I.,

*Sanitary Inspector, and Inspector of New Buildings,
Workshops, and Dairies, &c.*



BOROUGH OF TORQUAY.



Meteorological Report

FOR THE YEAR 1904.

FREDK. MARCH F.R. Met. Soc., M.P.S.

Borough Meteorologist.

The Borough Observatory,

February 1st, 1905.

METEOROLOGICAL REPORT.

*To the Worshipful the Mayor, Aldermen, and Councillors
of the Borough of Torquay.*

GENTLEMEN,

I beg to submit the following Report upon the Meteorological Observations made at the Borough Observatory during the year 1904. Readings have been taken twice daily—once only on Saturdays—and in accordance with the rules of the Royal Meteorological Society.

The instruments at both stations have been in continuous use, and have been kept in good working order. Mr. Marriott, the Assistant Secretary of the Royal Meteorological Society, paid a visit of inspection in August, and checked and verified these instruments.

The Monthly Return, as presented to the Council, has been published in the Torquay "Directory," and in the "Western Morning News" and "Western Daily Mercury," and has been posted in the town. The usual Monthly Reports have been furnished to the Royal Meteorological Society and to the British Rainfall Organization.

Weekly Reports have been sent for publication to the "Torquay Directory" and "Torquay Times" (part of the year only), and "Devon and Exeter Gazette." A weekly report of bright sunshine has been made to the Meteorological Office, and published in the official journal.

Daily charts of morning observations have been posted in the town and exhibited at the weather office, where, in the summer particularly, information respecting probable weather *has been* furnished to visitors.

The evening observations have been furnished by telegraph service to the following journals :—" Liverpool Post," " Manchester Guardian," " Newcastle Chronicle," " Bristol Mercury," " Sheffield Independent," " Leeds Mercury," * " Birmingham Post," * " Sheffield Telegraph," " Western Morning News," " Western Daily Mercury," London " Standard," * " Daily News," " Daily Chronicle," and " Morning Leader " (* summer only); to the " Daily Mail " when enquired for.

A similar set of observations has been forwarded by post to twenty-three stations and receiving offices on the G.W. Railway, and exhibited in a special frame. These stations include such important centres as London, Liverpool, Manchester, Birmingham, Cardiff, and Shrewsbury. Newcastle has just been added to this list.

With the sanction of the Sanitary Committee, I obtained in December from the Meteorological Office, the grant of two free copies of their Daily Weather Report. These are being exhibited at 34 Fleet Street, for the convenience of the public.

I am, Gentlemen,

Your obedient Servant,

FREDERICK MARCH.

OBSERVATORY AND INSTRUMENTS.

The Observatory is organised and maintained by the Town Council, and is under the supervision of the Royal Meteorological Society.

The several Barometers, Thermometers, and Rain Gauges have been verified at Kew Observatory, and regularly examined by a representative from the Royal Meteorological Society. Readings are all corrected for instrumental errors.

The Hygrometrical Results are deduced from the daily morning readings of the Dry and Wet Bulb Thermometers by means of Glaisher's Tables.

The averages for Sunshine are the result of 16 years', for Temperature and Rainfall of 28 years', and for Pressure of 20 years' observations.

The following are the instruments and appliances in regular use, those marked with an asterisk being the property of the Torquay Natural History Society, and lent by them to the town:—

* The **Barometer** is a Fortin Standard, and is read twice daily, at 9 a.m. (local time) and at about 5 p.m. All readings are reduced to 32° F. and mean sea level, and are thus comparable with all readings similarly reduced.

* An **Aneroidograph**, by Richard Freres, gives in graphic manner the alternations of pressure.

There are two double louvred **Stevenson's Screens**, each containing **Dry** and **Wet Bulb**, and **Maximum** and **Minimum Thermometers**. The instruments are of Casella's make, and are so placed that the bulbs of the hygrometer are four feet above the level of the grass. One of these sets has been working throughout the year at Cary Green, where the official temperatures for the Royal Meteorological Society have been taken; the *other* in the Princess Gardens.

A third ***Stevenson's Screen**, also double louvred, has been in position in the Princess Gardens, and has held a ***Thermograph**, or Self-recording Thermometer, and an **Ozonometer**.

***Solar Radiation Thermometers**, black bulb in vacuo and bright bulb in vacuo, are contained in a stand of their own, placed in the Princess Gardens.

The **Grass Minimum** is by Hicks, and is placed on grass in the Princess Gardens about an inch above the ground. The readings have been far more satisfactory since its removal to this site.

The **Rain Gauges** are of copper, by Casella, and of Snowdon pattern. They are placed, one on Cary Green, one in the Princess Gardens, with the upper edge 12 inches above the level of the ground.

The **Sunshine Recorders** are placed upon the covered shelter at the southern end of the Pier deck.

They are—

(1). A Curtis' Improved Campbell-Stokes instrument, fitted with a 3½-inch spherical lens of crown glass, and working on the principle of the burning-glass.

(2). A Twin Jordan Photographic Recorder, which works by the differentiation in colour effected by bright sunlight on specially prepared chemical paper.

DURATION OF BRIGHT SUNSHINE

In hours and tenths of an hour,

As recorded by the Campbell-Stokes' Standard Instrument.

1904.	Total Bright Sunshine.	Percentage Actual of Possible.	Difference from Average.	Greatest Amount in one day.	Date.	Percentage Actual of Possible.	Sunless Days.
	Hours.	%	Hours.	Hours.		%	
January ...	53·4	21	— 8·5	6·2	22nd	73	12
February ...	62·7	22	— 18·9	8·5	18th	85	10
March	124·3	34	— 15·0	10·3	23rd	84	7
April	180·2	44	nil	12·8	25th	89	3
May	183·3	39	— 46·8	13·8	19th	87	2
June.....	240·1	49	+ 9·5	14·5	28th	88	3
July	240·8	50	+ 5·2	14·8	8th	90	2
August.....	233·2	53	+ 27·5	12·9	2nd	83	0
September..	176·8	47	+ 13·8	11·3	7th	84	2
October ...	90·6	28	— 23·4	8·9	8th	81	7
November..	96·9	37	+ 31·5	8·1	14th	85	7
December ..	53·4	22	+ 0·1	6·0	8th	76	12
Year...	1735·7	39·3	— 25·4	14·8	July 8th	90	67

REMARKS.

The total amount of bright sunshine recorded for the year was 1,736 hours, being 36 hours more than the total of 1903, but 25 hours below the average of 15 years. The summer sunshine—April to September—amounted to 1,254 hours, or 6·9 hours per day, and the winter sunshine to 482, or 2·6 hours per day. The early months were again dull—January and February were very wet—with a deficiency on the quarter of 42 hours, but of November, dreaded in large towns because of its dullness, a writer in the "Lancet" says, "Among the English places none compare with Torquay and Jersey. Torquay was particularly bright for such a month as November. During the cold and rough weather for the last fortnight it was the most sunny spot in the United Kingdom." It is a curious fact that while the mean sunshine of Torquay is no less than 238 hours above that of a well-known resort on the S.E. coast, yet during this last summer the total registered at the S.E. town during the months of June, July, and August was 728 hours, at Torquay, 708 hours. The deduction is obvious, that Torquay enjoys an excess of sunshine when it is most needed and appreciated.

The following table gives the comparative sunshine returns for the year 1903, the last figures available :—

BRIGHT SUNSHINE, 1903.

COMPARISON WITH OTHER TOWNS AND HEALTH RESORTS.

From the Yearly Report of J. BAKENDALL, Esq., F.R. Met. Soc., the Fernley Observatory, Southport.

	Hours.		Hours.
TORQUAY	.. 1700	Tunbridge Wells	.. 1537
Southport ..	.. 1452	Folkestone ..	.. 1686
Scarborough ..	.. 1250	Brighton ..	.. 1650
Douglas ..	.. 1538	St. Leonard's ..	.. 1668
Harrogate ..	.. 1362	Eastbourne ..	.. 1682
Blackpool ..	.. 1474	Bournemouth	no information
Llandudno ..	.. 1509	Ventnor ..	.. 1621
Buxton ..	.. 1117	Newquay ..	.. 1610
Margate ..	.. 1471	Jersey ..	.. 1817
Bath ..	.. 1378	London ..	.. 1445
Weston ..	.. 1539	Bexhill ..	.. 1685

SHADE TEMPERATURES.

Taken at 9 a.m. (Local Time).

1904.	Maximum mean.	Minimum mean.	Max. & Min. mean.	Difference from Average.	Range mean.	Highest.	Date.	Lowest.	Date.
Jan. ...	48·2	39·4	43·8	+1·0	8·8	54·1	19th	31·1	1st
Feb. ...	46·7	38·1	42·4	-0·7	8·6	53·9	22nd	31·9	19th
March.	48·0	38·2	43·1	-1·0	9·8	58·6	9th	32·1	12th
April .	55·8	44·0	49·9	+1·7	11·8	63·3	24th	37·1	17th
May ...	58·2	47·3	52·8	-0·3	10·9	64·0	27th	38·9	9th
June...	63·2	51·6	57·4	-1·3	11·6	70·1	30th	44·0	10th
July ...	67·9	57·2	62·6	+0·9	10·7	78·0	17th	50·0	14th
Aug...	66·6	54·8	60·7	-0·9	11·8	76·5	4th	48·0	21st & 24th
Sept. .	62·9	52·3	57·6	-0·7	10·6	67·7	3rd	44·1	27th
Oct. ...	58·3	49·1	53·7	+1·8	9·2	64·9	18th	40·8	8th
Nov....	51·8	40·9	46·4	-1·1	10·9	59·8	6th	28·0	25th
Dec. ...	50·8	42·4	46·6	+3·1	8·4	55·8	16th	34·1	11th
Year	56·5	46·3	51·4	+0·3	10·2	78·0	July 17th	28·0	Nov. 25th

REMARKS.

The various temperatures for the four quarters of the year 1904, were as under:—

	Means of				Extremes.	
	Max.	Min.	Mean.	Range.	Max.	Min.
January to March	47.6	38.6	43.1	9.0	58.6	31.1
April to June	59.1	47.6	53.4	11.5	70.1	37.1
July to September	65.8	54.8	60.3	11.0	78.0	44.1
October to December	53.6	44.1	48.9	9.5	64.9	28.1

This table speaks for itself as to the equability of the Torquay climate. Few towns can shew a range of temperature varying only 10° throughout the year, the range meaning the difference between the shade temperature at the hottest part of the day and the coldest part of the night.

The highest temperatures were recorded in July and August, the highest being 78°0 on July 17th. During these months the following maximum readings were reported to the Meteorological Office (Summary No. 167) :—

England, N.E.				South.			
ork	...	...	80·0	London	...	...	91·0
incoln	...	...	87·5	Maidenhead	...	...	91·0
ulbeck	...	...	87·9	Southampton	...	...	87·3
ewcastle	...	...	82·0	Eastbourne	...	...	83·0
carboro'	...	...	80·0	Brighton	...	...	82·6
				Reading	...	...	86·0
				Margate	...	...	90·0
				Tunbridge Wells...	...	...	87·5
East.				North-West.			
ambridge	...	...	87·4	Manchester	...	...	83·1
romer	...	...	87·6	Liverpool	...	...	81·9
ildeston	...	...	85·8	Southport	...	...	82·4
illington	...	...	88·3				
hoeburyess	...	...	87·0				
Midlands.				South-West.			
arewsbury	...	...	82·0	Bath	...	...	84·0
ottingham	...	...	84·0	Clifton	...	...	84·2
ugby	...	...	86·0	Newquay	...	...	81·6
irmingham	...	...	81·3				
xford	...	...	85·0				

This table should deal another blow at the silly fiction that our town is hot in summer. It shews that on the hottest summer days Torquay was cooler than towns so far north as York, Newcastle, Scarboro', and Manchester, much cooler than the Midland towns, and more equable than such south-western stations as *Exeter* and *Bath*.

REMARKS ON SHADE TEMPERATURE—(continued).

It will surprise those who have not lived on the East Coast to learn that our extreme temperature is no less than 12° below that of Margate, and 10° below that of Cromer.

It is not so necessary to demonstrate the advantages of our winter climate; they are well known. The mean minimum for the cold months is over 41°, and the mean range only 9°·3. The coldest point, 28°·0 was touched during the exceptionally cold weather towards the end of November. During this period the following extremes were registered in various parts of the country:—

Torquay ...	...	...	28°·0	Lincoln ...	...	...	15°·0
Tunbridge Wells ...	...	...	23°·3	Rugby ...	...	...	11°·0
Bath ...	...	...	21°·0	Arundel ...	...	...	9°·4
Manchester ...	...	...	16°·0	Cambridge ...	...	...	8°·2

Commenting on the "Winter's Weather at some English Resorts," a writer in the "Lancet," under date April 16th, 1904, points out that "as regards the average temperature of the night, Scilly was superior to both the Italian and Rivierian resorts, while in Torquay and Falmouth the nights were just as warm as those at Nice. At most of the English stations, too," he continues, "the difference between the day and night temperature shewed less range than some of those abroad; Nice, for instance, had a mean diurnal range of 13°, while at Torquay and Jersey it was only 8°." Again, under date September 17th, 1904, he writes in relation to the summer climate, "When an equable temperature is required, it is the south-west coast that is superior. . . . Apart from Yarmouth, the stations with the least range were Torquay, Scilly, and Aberystwyth."

DURATION OF BRIGHT SUNSHINE

In hours and tenths of an hour,

As recorded by the Jordan Photographic Twin Instrument.

1904.	Total Bright Sunshine.	Difference from Camp- bell-Stokes' Record.	Greatest Amount in one day.	Date.	Sunless Days.
January	50.1	- 3.1	6.0	16th	12
February	60.6	- 2.1	8.3	18th	10
March	128.7	+ 4.4	10.5	23rd	7
April	182.1	+ 1.9	11.9	25th	3
May	176.9	- 6.4	13.2	15th	2
June.....	224.5	- 15.6	14.2	28th	2
July	249.3	+ 6.5	14.2	11th	2
August.....	232.8	- 0.6	12.9	2nd	0
September.....	177.5	+ 0.7	11.2	18th	0
October	86.9	- 3.7	8.3	8th & 22nd	7
November	94.9	- 2.0	7.8	14th	7
December	50.8	- 2.6	5.9	8th	12
Year.....	1715.1	- 20.6	14.2	June 28th July 11th	64

RAINFALL

In inches and hundredths.

1904.		Total Amount.	Difference from Average.	Wet Days.	Mean Wet Day Rainfall.	Greatest fall in 24 hours.	Date
January ...	*C. G.	5.56	+ 2.31	21	0.26	0.92	29th
"	†P. P.	5.52					
February ...	C. G.	5.93	+ 3.24	22	0.27	0.89	12th
"	P. P.	5.53					
March	C. G.	2.03	- 0.56	15	0.14	0.52	7th
"	P. P.	2.08					
April	C. G.	1.09	- 1.28	12	0.09	0.37	13th
"	P. P.	1.08					
May	C. G.	2.37	+ 0.37	18	0.12	0.38	30th
"	P. P.	2.37					
June	C. G.	1.11	- 1.09	8	0.14	0.40	14th
"	P. P.	1.08					
July	C. G.	4.62	+ 2.22	16	0.29	0.84	26th
"	P. P.	4.61					
August	C. G.	2.87	+ 0.20	14	0.20	0.76	16th
"	P. P.	2.90					
September	C. G.	1.81	- 0.61	11	0.16	0.82	11th
"	P. P.	1.80					
October ...	C. G.	2.05	- 1.99	11	0.19	0.81	2nd
"	P. P.	2.06					
November	C. G.	1.55	- 2.18	10	0.15	0.48	7th
"	P. P.	1.53					
December	C. G.	2.74	- 1.16	13	0.21	1.67	8th
"	P. P.	2.56					
Year	C. G.	33.73	- 0.53	171	0.20	0.92	Jan. 29th
"	P. P.	33.12					

* Cary Green.

† Princess Pier.

REMARKS.

The total rainfall was 33".73 at Cary Green, and 33".12 at Princess Pier. The year opened with two very wet months, the fall for January and February being in both cases about equal to the average for the two months combined. There was a heavy total in July, but in other months the rainfall was generally below the average, and the year closed with a deficiency of half an inch. The heaviest fall was 0".92 on January 29th. There were 171 wet days, but it must be remembered that in meteorological language a "wet day" is one on which the rainfall exceeds $\frac{1}{200}$ th of an inch only, so that many days which the public would reckon as fine are classified here as wet.

As regards the volume of rainfall, the Torquay total is four inches above the average for England, but it must be borne in mind that the difference is rather in heaviness of fall than in duration; thus, our mean fall per wet day is no less than a fifth of an inch. To take the two first illustrations that come to hand; in 1903 we had a total rainfall of 41 inches, which fell on 198 days; Southport, with 2 inches less, had 216 wet days; and Margate, with 14 inches less, yet had rain on 180 days.

So that a recent writer in the "Telegraph" is well within the facts when he says "The darkest shades assigned to Devon and Cornwall in the chart of rain look inconsistent with the lightest shade given to these regions in the map of sunshine, until we remember that a heavy rainfall is not incompatible with much sun; it only means that when it rains it rains hard, and has done with it smartly."

BAROMETRIC PRESSURE

In inches and thousandths.

Reduced to 32° F. and Sea Level.

1904.	<i>Mean of Month.</i>	<i>Difference from Mean of Month.</i>	<i>Highest Reading.</i>	<i>Lowest Reading.</i>	<i>Extreme Range of Pressure.</i>
January	29·967	— 0·080	30·724	29·193	1·531
February	29·607	— 0·458	30·284	28·856	1·428
March	29·982	+ 0·028	30·397	29·436	0·961
April	29·997	+ 0·118	30·272	29·389	0·883
May	29·963	— 0·008	30·217	29·540	0·677
June.....	30·064	+ 0·054	30·421	29·675	0·746
July	30·024	+ 0·033	30·248	29·599	0·649
August.....	30·036	+ 0·069	30·220	29·700	0·520
September	30·077	+ 0·066	30·212	29·611	0·601
October	30·112	+ 0·162	30·449	29·701	0·748
November	30·116	+ 0·167	30·515	29·579	0·936
December	29·930	— 0·043	30·567	28·899	1·668
Year	29·990	+ 0·013	30·724 Jan. 22nd	28·856 Feb. 9th	1·868

REMARKS.

The mean barometric pressure for the year was 29.990 inches of mercury, being 0.013 above the average of 20 years, and 0.055 above the mean of 1903.

Speaking generally, a barometer below the average for the month means an increased rainfall for the month, and *vice versa*. This rule held good in the months of January, February, March, April, May, June, September, October and November. In July and August the reading was well above the average, and the rainfall also in excess, in July markedly so. In December there was a decreased rainfall with a low barometer.

The highest reading was 30.724, on January 22nd, and the lowest 28.856, on February 9th, shewing a fall of nearly two inches in 18 days. The record readings are respectively 30.911 and 28.426.

HUMIDITY, CLOUD, OZONE, AND WIND.

1904.	HUMIDITY.			CLOUD Cloud mean 1 to 10.	OZONE. Per centage of possible.			WIND. Prevailing Quarters.
	Dry Bulb mean.	Wet Bulb mean.	Relative Humidity.		Mean Daily Amount.	Greatest Daily Amount	Least Daily Amount.	
	°	°	%		%	%	%	
January	43·9	42·2	86	7·0	46	80	10	N., S. & W.
February	42·0	39·7	82	7·5	59	90	10	W.
March ...	43·2	40·4	79	6·5	45	80	10	E. & W.
April ...	50·9	46·7	72	6·0	58	90	20	N.W., W. & S.W.
May	54·0	50·3	76	6·0	57	80	15	W., S.W. & S.E.
June.....	58·5	53·9	72	5·0	51	85	20	E. & S.E.
July	63·7	59·5	76	5·5	38	60	20	E., S.E., & W.
August...	62·5	57·9	73	5·5	45	70	20	W.
Sept. ...	59·5	55·2	74	5·5	45	70	10	S.E.
October	54·1	51·3	81	7·5	44	90	20	W.
Nov. ...	45·2	43·1	84	4·0	35	75	10	N.W.
Dec.	46·3	44·5	87	7·0	48	80	10	W.
Year...	52·0	48·7	78	6·1	48	90	10	W., E., N.W., S.W. & S.E.

REMARKS.

The mean daily amount of Cloud, estimated from eye observation, where clear sky = 0, and entirely overcast = 10, was 6.

The ozone test papers and scale used are Moffat's, and the principle on which the instrument works is the liberation of iodine by the action of ozone upon iodide of potassium contained in the paper, and the action of this free iodine upon starch, in solution of which the paper has also been soaked. This is only a rough test, but it is the same for all stations, and is approximately correct.

The mean daily amount of Ozone was 48% of the possible, with a maximum of 90% and a minimum of 10% of the possible.

During the colder months, from October to December, and January to March, the direction of the wind was generally westerly. From October 1st to December 31st the wind was due east at 9 a.m. on 13 mornings only.

The mean Humidity of the air, as taken by Mason's Hygrometer, was 78. As this figure is frequently misunderstood, it may be well to state that it is a percentage figure, and indicates the proportion of possible moisture, 100 standing for complete saturation. "Watery vapour is always to be found in the atmosphere; its presence is constant, but its proportion variable. It may perhaps be said that the air of England contains on an average something like 1½ per cent. of aqueous vapour" (*Huxley's Physiography*). It is a percentage of this percentage that is indicated by this figure.

The following table, compiled from Mr. Baxendell's Report (1903) to the Southport Corporation, shows that the air of Torquay is distinctly dry, and not humid, as is generally supposed:—

MEAN HUMIDITY TABLE.

	..	..	%		..	..	%
TORQUAY	..	..	78	Bath	..	..	78
Southport	..	..	82	Ilfracombe	..	..	80
Douglas	..	..	89	Tunbridge Wells	..	..	81
Llandudno	..	..	78	Bude	..	..	85
Buxton	..	..	82	St. Leonard's	..	..	82
Cheltenham	..	..	82	Brighton	..	..	83
Margate	..	..	82	Eastbourne	..	..	82
Scilly	..	..	83	Bournemouth	..	..	79
Guernsey	..	..	85	Newquay	..	..	86
Falmouth	..	..	84	LONDON (Greenwich)	..	..	80

SOLAR AND TERRESTRIAL RADIATION

1904.	SOLAR.			ON GRASS.			Number of
	Max. Mean	Highest.	Date.	Max. Solar Radiation.	Minimum mean.	Lowest.	
Jan.	66.5	89.7	18th	18.3	34.0	26.0	23rd
Feb.	76.7	96.7	22nd	30.0	32.3	23.0	19th
March....	81.5	99.8	9th	33.5	32.4	22.7	12th
April....	96.8	114.1	8th	41.0	38.1	28.3	11th
May	94.4	100.9	27th	36.2	43.7	34.0	9th
June.....	101.5	112.0	26th	38.3	47.5	41.0	10th
July	106.2	115.8	13th	38.3	54.8	45.6	2nd
Aug.	108.8	121.8	27th	42.2	50.8	42.8	24th
Sept	108.1	121.0	7th	45.2	48.6	39.7	26th
Oct.	86.1	109.9	1st	27.8	44.5	35.5	8th
Nov.....	78.4	98.7	5th	26.6	35.8	22.6	25th
Dec.	65.9	90.4	15th	15.1	36.9	26.2	11th
Year	89.3	121.8	Aug. 27th	32.7	41.6	22.6	Nov. 25th





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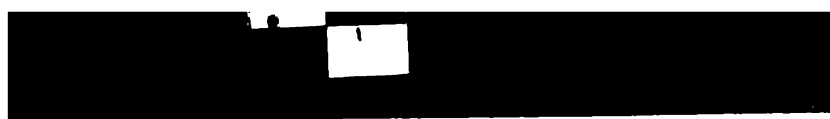
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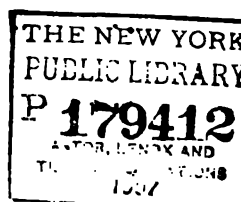
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★ Town Clerk

BOROUGH OF TORQUAY.



Annual Report

OF THE

MEDICAL OFFICER OF HEALTH

FOR THE YEAR 1905.

BY

THOMAS DUNLOP, M.B., C.M., D.P.H.,

TOGETHER WITH THE

Annual Reports of the Sanitary Inspectors

AND THE

Report of the Borough Meteorologist.

TORQUAY :

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1906.



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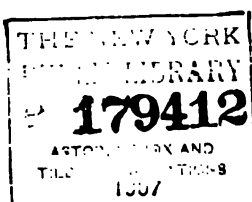
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TOGETHER WITH THE

Annual Reports of the Sanitary Inspectors

AND THE

Report of the Borough Meteorologist.



BOROUGH OF TORQUAY, 1905.

Area of the Borough, 3,858 acres.

Rateable value, £187,000.

Population—Census (1901), 33,625 ; estimated at the middle of 1905, 33,900.

Number of inhabited houses—Census (1901), 6,614.

Average number of persons per house, 5.

Density of population, 8·7 persons per acre.

Crude death rate, 1905, 13·9 per 1000. Average for previous 10 years, 15·5 per 1000.

Corrected death rate, 1905, 14·5 per 1000. Average for previous 10 years, 14·2 per 1000.

Death rate if all visitors excluded, 12·3 per 1000.

Birth rate, 15·4 per 1000. Average for previous 10 years, 17·4 per 1000.

Infantile mortality, 1905, 95. Average for previous 10 years, 134.

Death rate from zymotic diseases, ·94 per 1000.

Mean annual temperature, 51·2.

Hours of Bright Sunshine Recorded, 1774·8.

Total Rain fall, 27·88 inches.



BOROUGH OF TORQUAY.

ANNUAL REPORT

OF THE

Medical Officer of Health

For 1905.

*To His Worship the Mayor, and to the Aldermen and Councillors
of the Borough of Torquay.*

GENTLEMEN,

I beg to present my third Annual Report on the health of the inhabitants, and the sanitary circumstances of the Borough of Torquay. The report also contains details of the administration of the Factory and Workshops Act as required by the Secretary of State for the Home Department.

It will be noticed that there is again a slight decline in the birth-rate, which is 15·4 per 1000, against 15·7 in 1904. The gross death-rate—13·9—exactly the same as was recorded in 1904, is very satisfactory. A curious coincidence about the deaths is the fact that the number of deaths of males—211—is exactly the

same as in 1904, and of females 261, only one less than last year. Forty-five per cent. of the total deaths were those of persons over 65 years of age. The infantile mortality—95 per 1000 births—is considerably less than in 1904, when it equalled 120.

I would draw your attention to the details of the epidemic of measles which occurred in the first half of the year, and to the effect it had on the attendance in the elementary schools. The lessons learnt from it should be a guide to us in dealing with future outbreaks.

My appointment as Medical Officer to the Education Authority has considerably helped me in my efforts to improve the healthiness of the town. Principally by giving me early notice of infectious illness, and by giving me a means of access to premises, so that I can form some estimate as to their sanitary condition.

I have to thank the members of the Sanitary Committee, and of the Town Council, for their kindness and support throughout the year, and also members of the Sanitary Staff for their ready assistance.

I am, Gentlemen,

Your obedient Servant,

THOMAS DUNLOP, M.B.

Medical Officer of Health.



THE BOROUGH.

The Borough of Torquay is formed by the civil parishes of St. Mary-Church and Tormoham. The total area of the Borough is 3858 acres. It is divided into nine wards, which, with their populations, according to the 1901 census, are as follows :—

Torre	...	...	...	...	3851
Waldon	...	...	...	...	3576
Upton	...	...	...	...	4339
Ellacombe	...	...	...	...	5911
Strand	...	...	...	...	3129
Torwood	...	...	...	...	3644
St. Mary-Church	...	...	...	...	3312
Babbacombe	...	...	...	...	3264
Chelston	...	...	...	...	2599
The Borough	...	...	...	...	33,625

For the purpose of Sanitary administration, the Borough is divided into three districts, in each of which a Sanitary Inspector has full charge, under the Medical Officer of Health.

No. 1 District.—The whole of the Chelston, Torre, and Waldon Wards, that portion of the Strand Ward on the west side of Fleet Street, and that portion of the Upton Ward on the west side of Union Street.

No. 2 District.—The whole of the Torwood Ward, that portion of the Strand Ward on the east side of Fleet Street, the whole of Ellacombe Ward, and that portion of the Upton Ward on the east side of Union Street.

No 3 District.—The whole of the St. Mary-Church and Babbacombe Wards.

The principal public Institutions from a Sanitary point of view are—

The Torbay Hospital in the Upton Ward.

The Western Hospital for Consumptives, and the Rosehill Children's Hospital in the Strand Ward.

Smyrna, or the Mildmay Consumptive Home, in the Ellacombe Ward.

St. Barnabas', St. Luke's, St. Raphael's, and Erith House, all Consumptive Homes, situated in the Torwood Ward.

The Borough Sanatorium for infectious diseases is situated on the Newton Abbot Road, just outside the Borough boundary, in the Newton Abbot Rural District. The Corporation possess another Isolation Hospital, also situated outside the boundary, about half a mile from the village of Cockington.

PHYSICAL FEATURES AND GENERAL CHARACTER OF THE DISTRICT.

These are of a highly diversified character, especially the central portions forming the Torquay promontory. In this district the two principal heights are the Warberry, 448 feet, and the Lincombe Hills, 372 feet, forming long ridges running N.E. and S.W., which are composed of the Lower Devonian grits and slates. The lesser heights, such as the Braddons, Waldon Park, and Chapel Hill, are formed of Middle Devonian limestone, which rests above the grits and slates mentioned.

On each side of this central area, viz., at St. Mary-Church and Chelston, rocks higher in the Geological scale for the most part prevail. These rocks belong to the Permian formation, and consist of beds of Breccia—a kind of conglomerate—and sandstones of a deep red colour, owing to the presence of peroxide of iron.

There is very little clay in any portion of the area and what does occur is of the nature of marl, and is confined to the lower levels of certain valleys or depressions, so that rain is not detained on the surface, as it rapidly disappears through these rather pervious rocks and soils.

METEOROLOGY.

Full details of the Meteorology of the Borough will be seen in the appended Annual report of Mr. F. March, F.R. Met. Soc., M.P.S., Borough Meteorologist; but the following resumé of the climatic conditions may be of interest:—

	1904.	1905.
Highest Maximum Temperature	78°·0	78°·7
Lowest Minimum ,,	28°·0	25°·8
Mean Maximum ,,	56°·5	56°·8
Mean Minimum ,,	46°·3	45°·6
Mean of Maximum and Minimum	51°·4	51°·2
Difference from average	+0°·3	—
No. of days on which rain fell	171	148
Total fall in inches	33·73	27·88
No. of hours of bright sunshine	1735·7	1774·8

THE CLIMATE OF TORQUAY.

In last year's report I gave a table (quoted from "The Lancet") showing the character of the winter weather at various English Health Resorts, and a comparison was made with that of Foreign Health Resorts, such as Nice and Florence. The principal points demonstrated were that, although it was slightly warmer in the latter, yet the nights at Torquay were just as warm as those of Nice, while the difference between the day and night temperature was less here than abroad. That Torquay enjoys an excess of sunshine during the winter months over most health resorts is an indisputable fact. The other special features of its climate are equability of temperature and dryness of the air.

The benefit of living under such climatic conditions must be apparent to all, but it is inestimable to those who are asthmatical, or who are sufferers from chronic bronchitis. To the aged and infirm, who are extremely sensitive to every change of temperature, life under such conditions is prolonged and made worth living. The bright sunshine and the possibility of being constantly in the open air are most advantageous to children, and those who are delicate have every chance of growing up strong and healthy.

The fiction that in summer Torquay is unbearable on account of the heat appears to be dying a natural death. The meteorological returns have proved that the maximum temperature during July and August is considerably less (some 5 to 10 degrees) than that of London and most towns in the North and Midlands. This is only what one would expect from the position of Torquay; having such a wide sea front, and being flanked on the north-west by Dartmoor, it is constantly fanned by cool breezes from one or other direction. Indeed, it is an ideal summer holiday resort, a fact that is being demonstrated by the increasing number of visitors who year after year spend their holidays here.

WATER SUPPLY.

The water supply of Torquay is derived from an upland surface gathering ground about 15 miles from Torquay, on the borders of Dartmoor. The area of the gathering ground is about 2,241 acres, and is composed of:—

					Acres.
Moorland	...	...	...	...	584
Woods	...	...	...	...	75
Woods (new)	...	...	...	...	30
Land within zone	...	...	...	...	350
Land under cultivation	...	...	...	...	212
Grazing	...	...	...	...	990
Total				...	2241

At the present time the water is stored in two large reservoirs—the Tottiford Reservoir containing 103,000,000 gallons, and the Kennick Reservoir 194,000,000 gallons.

The supply is augmented by taking water from the Trenchford stream, the yearly average amount being 170,000,000 gallons. In order to reduce to a minimum the possibility of there being any shortage of water in very dry seasons, the Corporation applied for and obtained an Act of Parliament, enabling them to build another reservoir in the Trenchford Valley, impounding the waters of the Trenchford stream. This reservoir will be capable of containing 200,000,000 gallons.

The work of constructing the dam was commenced in February, 1904, and has continued satisfactorily since then. At the present time the excavation of the trench has been completed and the concrete filling almost finished, while the clay core and the embankment are rapidly being placed in position.

In the Parliamentary Session of 1896-7 the Corporation obtained power to purchase the whole watershed. This they did, and were enabled to remove all farms and inhabited buildings from the area, thus doing away with a constant menace to the purity of the water. The reservoirs and all streams and feeders have also been surrounded by zone fences with trenches inside; the latter being intended to catch all surface water, and cause it to percolate through the ground before reaching the streams. The improved quality of the water fully justifies the Corporation in the large expenditure incurred, and has reduced the possibility of pollution to a minimum.

Much labour has during the year been expended in cleaning up and clearing the streams, and in endeavouring to prevent the passage of peaty matters into the reservoirs.

The rainfall on the watershed is taken at four stations, and the results were as follows :—

Kennick	...	...	...	33·79 inches.
Mardon	...	...	...	33·70 "
Blackingstone	...	...	...	21·32 "
Laployd	...	...	...	25·12 "

Average over whole watershed 28·48 inches, or eight inches less than in 1904, when it was 36·49 inches. The average amount of evaporation was 20·09 inches over a water area of about 37 acres.

The water supply is continuous, and the average amount used for all purposes was 32·75 gallons per head per day, against 34·73 gallons in 1904.

Professor Percy Franklin, after visiting the gathering and examining samples of the water, both chemically and bacteriologically, reported as follows :—

“ A source of water supply which, in respect of freedom from suspicion, ranks with the best upland surface supplies in the Kingdom. The water also contains such a small amount of lime and magnesia salts that it possesses all the well-known advantages of very soft water, whilst its slightly alkaline reaction prevents it from having any solvent power on lead.”

During the year I have made regular chemical analyses of the water taken from different parts of the borough, and also of samples taken from the springs and streams feeding the reservoirs. The following results of a recent analysis are typical :—

PHYSICAL CHARACTERS.

Colour ...	...	Slight brownish yellow.
Turbidity ...	...	Cloudy.
Odour ...	...	None.
Deposit ...	...	A very minute amount of vegetable debris.

CHEMICAL RESULTS.

Expressed in parts per 100,000.

Total solids...	...	...	...	...	6·1
Chloride ...	...	...	...	...	1·5
Hardness ...	...	...	...	...	2·4
Nitrites ...	...	...	...	...	Nil
Nitrates ...	...	...	...	...	·12
Free Ammonia ...	...	...	...	...	·000
Organic Ammonia ...	...	...	...	...	·009
Oxygen absorbed in 4 hours at 80° F. ...	...	...	...	...	·066
Poisonous metals ...	...	...	...	...	Nil

From an examination of the above results and a knowledge of the gathering ground, I have no hesitation in classing this water as an excellent one for all domestic purposes.

SEWERAGE.

The sewage of the whole district, and most of the storm-water, is conveyed to the main sewer in Fleet Street. That of the low-level system, which comprises the area covered by the Strand, Torbay Road, Vaughan Parade, Victoria Parade, Beacon Hill, George Street, and Swan Street, being pumped into the main sewer by means of automatic hydraulic pumps. The main sewer is 7 feet in diameter, and runs from Fleet Street to Hope's

Nose, a distance of almost two miles. The outfall is at such a level that the sewage is discharged at all states of the tide. No method of treatment is adopted, as the flow of current is out towards mid-channel beyond Berry Head, and does not under any circumstances return towards the bay.

During the year, after exceptionally heavy rains, complaints have been received of the flooding of certain houses abutting on the St. Mary-Church Road, through the baying back of water in the sewer in Broadmead Road, Plainmoor. The Sanitary Committee, considering that the present sewers are of sufficient capacity to take away ordinary heavy rain, do not accept any liability for flooding through exceptional rain storms, but Mr. Garrett, the Borough Engineer, is, without prejudice, endeavouring to remedy the trouble.

The opening out of a new building estate off Fore Street, St. Mary-Church, has caused the Council much anxiety, owing to the difficulty of drainage. The owner of the estate proposed to drain all the houses to a common cesspool, which must necessarily have become a nuisance to the neighbourhood, and also by the possibility of the overflow finding its way on to Oddicombe Beach. This trouble has, however, after much correspondence and numerous conferences, been overcome by the owner agreeing to pay a fair proportion of the cost of laying a new sewer through into Petitor Road to the existing sewer in that road.

Much consideration has also been given to a proposal of the owner of the Mallock Estate, who desires to open up certain land at Livermead for building purposes. Owing to the impossibility of draining them into the Council's system of sewerage, he proposes to drain both the existing houses and those to be erected to a tank situated near the railway, and to fix an electric motor and pumps to lift the sewage into the nearest sewer of the Council. As it was seen to be desirable that this estate should be opened up, and also that the cesspool receiving the sewage of the houses at present built, and which required constant attention, should be done away with, the Council have practically come to terms with the owner to take over the pumping station when erected.

COLLECTION AND DISPOSAL OF REFUSE.

House refuse is removed by the employés of the Corporation, under the Surveyor's Department. In most parts of the town it is removed once a week, but in certain parts twice. It is carted to the destructor works in Upton Valley, and there consumed, about 12,000 tons being dealt with annually. The destructor is

a "Warner Perfectus" of four cells. The boilers are heated from the furnaces, and the steam generated can be used to drive donkey-engine, vertical engine for running blower, 25-horse power engine for running mortar mill and electrical installation. The clinker produced is ground and used for mortar: for this there is a good demand.

POPULATION.

The population of the Borough at the 1901 census was found to be 33,625, of whom 13,339 were males, and 20,286 females. The number of inhabited houses being, 6,614, and the average number of persons per house was 5.

The further we get from the date of the last census, the more difficult it is to give a proper estimate of the population. There is every reason to believe that the population has increased since the last estimate was made. This is indicated by the fact that during the year some 92 new houses have been erected, that a large number of men have come into the town for employment in the construction of the new electric tramways, and that there appears to be fewer unlet houses in the district. This would almost justify the population being estimated at 34,000, but the tendency is always to over estimate, so that I have merely added the natural increase (50) to last year's estimate, which would make it 33,900, and this is the figure I have used to calculate the various rates.

The average number of persons per acre is 8·7.

It is necessary, in preparing statistics and comparing the various death rates of Torquay with those of the whole country, to consider the age and sex distribution of the population. The population of a district, in which the proportions of males to females, or of young persons to old persons, are different to those of the country generally, will suffer more than the whole country from the diseases which particularly affect persons of the age and sex which predominate in the district. In order to ensure a just comparison between the death-rate of such a district and the country as a whole, it is necessary to raise or lower the gross death-rate of the district to what they would be if the proportions of the local population in respect of age and sex were the same as those in the country generally.

As Torquay has a much larger proportion of females to males in its population, and of people at advanced ages, than that of England and Wales, I have calculated a factor by which all Torquay rates have to be multiplied to compare them with those of the whole country. This factor is '8044.

BIRTHS.

The births registered during the year were 522—males 272, females 250—being 8 less than in 1904. Of the 522 births, 15 were illegitimate.

The numbers registered in each quarter of the year were as follows :—

1st quarter	...	...	...	131
2nd „	...	...	...	139
3rd „	...	...	...	138
4th „	...	...	...	114
Total	...	...	...	522

The birth rate is equal to 15·4 per 1000 of the population, and is ·3 less than in 1904. It is the lowest rate recorded for the Borough.

The following table shows the gradual decline in the Torquay birth-rate. It must, however, be remembered that the birth-rate of England and Wales is also falling, and the age and sex distribution of the population of the district must also be taken into account when comparing it with other places.

Years.	Number of Births.	Torquay Birth Rate, per 1,000 living.	England & Wales Birth Rate, per 1,000 living.
1900	559	16·6	28·9
1901	556	16·5	28·5
1902	540	16·0	28·6
1903	536	15·9	28·4
1904	530	15·7	27·9
1905	522	15·4	27·2

In view of this continued fall in the birth-rate, not only here, but throughout the country, it is necessary that steps should be taken to reduce the high infantile mortality, and I believe that this can, to a certain extent, be accomplished by the systematic teaching of hygiene in our schools, especially to the elder girls, seeing that ten years hence they will have all the responsibilities of motherhood, and on them the health of the next generation will depend.

VACCINATION.

Through the courtesy of Mr. Edwards, the Vaccination Officer, I am able to give the results of primary vaccination for the years from 1897 to 1904. It is very satisfactory to note the large percentage of children protected from this loathsome disease.

Year.	Total births registered	Successfully vaccinated	Insusceptible of Vaccination	Had Small-pox	Number of Certificates from Conscientious Objectors	Died Unvaccinated	Postponed by Medical Certificate	Removed to other districts the Vaccination Officer of which has been apprised	Removed Address unknown	Percentage successfully Vaccinated	Excluding those who died Unvaccinated. Percentage
1897	683	581	2	—	—	59	—	4	20	85%	93%
1898	664	544	2	—	10	64	6	7	25	82	90
1899	612	505	6	—	14	67	6	3	11	83	93
1900	596	502	1	—	15	47	7	3	21	84	91
1901	597	491	2	—	16	57	13	1	17	82	91
1902	579	488	2	—	8	61	4	4	8	84	92
1903	565	508	2	—	14	34	1	3	3	90	95
1904	564	476	—	—	20	49	3	6	8	84	92

INFECTIOUS DISEASES.

Under the Torquay Harbour and District Act, 1886, provision was made for the compulsory notification of the dangerous infectious diseases. It also contained similar clauses to those in the Infectious Diseases Prevention Act, 1890, which rendered its adoption unnecessary.

NOTIFICATIONS.

During the year 59 cases of infectious disease were notified. One case of Small-pox, six of Diphtheria, five of Erysipelas, thirty-six of Scarlet Fever, ten of Enteric Fever and one of Puerperal Fever.

Table giving comparison with previous five years.

Notifiable Disease.	1905.	1904.	1903.	1902.	1901.
Small-pox	1	—	2	—	—
Cholera	—	—	—	—	—
Diphtheria	6	4	13	9	5
Membranous croup	—	—	—	—	—
Erysipelas	5	3	3	3	3
Scarlet fever ..	36	28	21	17	62
Typhus fever ..	—	—	—	—	—
Enteric fever ..	10	9	9	8	18
Relapsing fever ..	—	—	—	—	—
Continued fever ..	—	—	—	—	—
Puerperal fever ..	1	1	1	—	1
Plague	—	—	—	—	—
*Chicken Pox ..	—	—	5	33	—
Totals ..	59	45	54	70	89

*In 1903 Chicken Pox was notifiable for the first three months of the year, and in 1902 for the last nine months.

The following table gives the notifications during each month of 1905 :—

	Small-pox.	Diphtheria and Membranous Group.	Enteric Fever.	Puerperal Fever.	Scarlet Fever.	Erysipelas.	Chicken-pox	Total.
January ..	—	—	—	—	2	—	—	2
February ...	—	—	—	—	—	—	—	—
March ..	—	—	1	—	2	—	—	3
April ..	—	—	—	—	3	1	—	4
May ..	—	—	1	—	—	—	—	1
June ..	—	—	—	—	9	—	—	9
July ..	—	—	3	—	3	—	—	6
August ..	1	—	2	—	2	—	—	5
September ..	—	1	1	—	7	—	—	9
October ..	—	3	1	1	5	2	—	12
November ..	—	2	—	—	3	2	—	7
December ..	—	—	1	—	—	—	—	1
Totals ..	1	6	10	1	36	5	—	59

In table III. of the Local Government Board returns on page 41 full details are given of the age of patients, the number occurring in each ward, and the number of such removed to Hospital.

Out of 59 cases, 32 were removed ; this is equal to 54 per cent. They were as follows :—

Small-pox	...	...	1 to Cockington Sanatorium
Diphtheria	...	...	4 to Sanatorium, Newton Road
Scarlet Fever	...	...	24 to " "
Enteric Fever	...	...	2 to Torbay Hospital

STEPS TAKEN TO PREVENT THE SPREAD OF INFECTIOUS DISEASE.

On the receipt of a notification, the house is visited as soon as possible, particulars as to source of infection, milk supply, school attended, drainage, etc., obtained, and if necessary arrangements

made for the removal of the patient to the Sanatorium. Frequently the Medical Attendant notifies that the case is one suitable for treatment in the Sanatorium, a step which greatly facilitates their early removal.

After removal, or on recovery, should the patient be isolated at home, the infected rooms and bedding are fumigated with formaline. Next day the bedding and clothing is removed to the Disinfecting Station, and there sterilised in a steam disinfecter.

The disinfecter is one of the Thresh Disinfecter Company's machines. The building was erected last February, and the disinfecter was ready for use early in March. This has made a handsome and extremely useful addition to the Sanatorium, and the machine is of such simple construction that the Caretaker was, after a couple of lessons, able to work it efficiently. It has been working constantly since March without requiring any special attention. Over 300 articles, such as mattresses, pillows, blankets, clothing, etc., being disinfected.

Where it is found that children in an infected house are attending one of the public elementary schools, the Attendance Officer is notified of the case. All cases suspected to be infectious by the School Attendance Officer, and where no doctor is in attendance, are notified to me as Medical Officer to the Education Authority.

MEANS OF ISOLATION.

The Borough Sanatorium, Newton Abbot Road, consists of the administrative Building—a Scarlet Fever ward block, consisting of two wards, with 7 beds in each; and a Diphtheria ward block, two wards, with 7 beds in each. There is also a private ward for one patient, with Nurse's room attached.

ENTERIC FEVER.

The Authorities of the Torbay Hospital have always been found willing to treat cases of Enteric Fever.

THE COCKINGTON SANATORIUM.

When the Chelston Urban District was absorbed by the Borough, the Corporation were compelled to take over the Isolation Hospital of that district. This building is considerably more than half-a-mile from any inhabited house. It has on two occasions been used for the treatment of cases of imported

small-pox, and is always kept in readiness for future cases. I consider it absolutely necessary to have accommodation for the reception of such cases, especially in a health resort such as Torquay, where the introduction of small-pox is not unlikely, and the consequences of an epidemic would be disastrous.

SMALL-POX.

One case was notified early in August. The patient was a travelling pedlar, who had tramped from Plymouth, and when taken ill was staying in a common lodging-house in the town, where he had been for about 10 days. Fortunately, the case was quickly diagnosed, and as the Sanatorium was ready for use, he was soon isolated. The case was of a moderately severe type, the patient having never been vaccinated, and was of a semi-confluent kind on the face, but with the exception of considerable inflammation under the hard skin on the soles of his feet, the patient made an uninterrupted recovery, and was able to be discharged in about six weeks. After his removal to the Sanatorium, the room he had been staying in, with four other men, was fumigated with formaline, and was not allowed to be used again until the bedding had been sterilised in the steam disinfecter, the floor and bedsteads washed with disinfectants, and the walls limewashed. The Public Vaccinator visited the house three times, but had little success in getting the inmates re-vaccinated. This caused me some anxiety, and they were kept under daily observation for a fortnight, but no further cases occurred. I attribute this to the case having been diagnosed just as the rash appeared, the immediate isolation of the patient, and the efficient manner in which the disinfection was carried out. Had other cases occurred, it would undoubtedly have scared away many of the large number of summer visitors then in the town, and considerably shortened the season.

DIPHTHERIA.

Six cases were notified, compared with four in 1904, and 13 in 1903. Four were removed to the Sanatorium. One case proved fatal. One child was discovered suffering from post diphtheretic paralysis while attending school, and was possibly the source of infection in another case.

SCARLET FEVER.

Thirty-six cases were notified, one of which ended fatally. Twenty-four were removed to the Sanatorium. Three cases were distinctly traceable to a child who came from Birmingham here

while desquamating. She had been going about the town in this condition until the other cases occurred in the same house, when her condition was discovered. Seven cases occurred in Chelston, one of whom was a child notified only when peeling profusely. There is no doubt but that she was the source of infection in one or two of these cases. During the year six distinct cases were either notified or discovered in a desquamating state, and it is difficult to say for how many cases they accounted.

The sex and age distribution is as follows :—

	At all ages.	Under 1.	1—5	5—15	15—25	25—65	Over 65
Males	17	—	3	12	1	1	0
Females	19	—	1	16	2	0	0

ENTERIC FEVER.

Ten cases were notified, against nine last year. Two proved rapidly fatal. Two were removed to the Torbay Hospital for treatment. Two cases occurred in one house, the drains of which were found in a very defective condition. In four other cases defective drainage conditions were discovered in their homes. In three cases the disease was distinctly traceable to the consumption of sewage-polluted shell-fish obtained from the River Teign. During the summer and autumn of each year, in spite of widely posted warnings, we invariably get several cases, often fatal, due to this latter cause. The Sanitary Committee decided to communicate with the Local Government Board and the County Council, in the hope of having the matter investigated. They also informed the Sanitary Authorities, whose districts border on the Teign, as to what steps they were taking. As the result of these communications, the Local Government Board requested that I should furnish them with a special report on the subject. This was done, and a copy of it was also sent to the County Council. The outcome was scarcely satisfactory from our point of view, the opinion held by both authorities being that, as the sewage of the various towns and villages on the banks of the Teign was discharged into tidal waters, little or no authority could be exercised over them. The Local Government Board further stated that we were doing all that it was possible to do in the way of warning the public against eating shell-fish from these sources. I cannot help thinking

that had there been a County Medical Officer of Health, devoting his whole time to sanitary work, such matters as these would receive thorough and independent investigation, and doubtless some steps would be taken to remedy the evil. This is not a new complaint, but one that has been with us for many years; nor is it a matter which affects this district alone. Both Newton Abbot and Teignmouth suffer in a similar manner, as the past annual reports of their Medical Officers show.

It may be of interest to give an abstract of a letter I received from the Secretary of the Fishmongers' Company, London, with reference to the connection of sewage polluted cockles to Typhoid Fever. He states:—

“During the past two years the Fishmongers' Company have paid particular attention to the cockles supplied to the London Markets. Numerous samples have been analysed and special attention paid to the method of cooking. As a result of Professor Klein's bacterioscopic examination, it has been shown that cockles and mussels are sterilised if boiled for at least $3\frac{1}{2}$ minutes. The cocklers were advised that if they boiled the cockles for at least that time, they would be allowed for sale in the London Markets. It was found that instead of the shell-fish being properly cooked, they reached the market in a more or less raw state.

The Fishmongers' Company then tried if steam for cooking would be more efficacious than water, and it was found that both cockles and mussels steamed for five minutes were sterilised and the fish, according to experts from Billingsgate Market, were in good marketable condition and really in appearance, if anything, better than when boiled.

The Company thereupon recommended cocklers to use a steaming apparatus, and also suggested the same to the Corporation of London, which was adopted some time back and has worked satisfactorily ever since, with the result that all the cockles on the London Market are steam cooked. The steaming, instead of boiling the shell-fish, is not only of great advantage to the trade, but as changes of water are obviated, necessarily the process must be much cleaner than the old system.”

If steaming for five minutes is sufficient to sterilise shell-fish without altering their appearance, surely some means might be devised to compel dealers to do this before the cockles are sold.

PUERPERAL FEVER.

One case was notified, the patient having been attended in her confinement by a certified midwife. The confinement was said to be normal and the patient remained quite well till the 8th day, when she became very ill and a doctor was called in. The midwife was at once visited and questioned as to the possible cause, but could only suggest that some article of food had been taken. The midwife was prohibited from attending any other case for three weeks and was instructed to boil all washable articles of clothing she had been wearing when attending the case.

Working of the Midwives Act, 1902.

The local administration of this Act is being carried out by a Sub-Committee of the Sanitary Committee. Early in the year all the known midwives in the Borough were communicated with and the requirements of the Act put before them, both by circular and by personal interviews with many of them.

The result has been that six midwives were certified on the ground of having been in *bona fide* practice as midwives for 12 months previous to 31st July, 1902, and one on the ground that she possessed a certificate from one of the recognised Lying-in Hospitals. Besides these certified midwives, there are probably quite as many women uncertified still carrying on this work and who will continue to do so till 1910, when all must be certified who desire to act as midwives. I have visited the certified midwives at their homes several times for the purpose of inquiring as to their mode of practice, and to arrange for the proper keeping of their books, etc.

Most of these women are intelligent and have had a considerable experience in their work as midwives. Two of them, however, if not absolutely illiterate, have to get their daughters or other friends to fill in their case-books for them. Their knowledge of labour is only superficial, and so long as everything goes right they are quite capable, but I doubt whether they are able to detect an abnormal presentation or whether anything is going wrong until it has actually happened, which is unfortunate for the patient. None seem to know or are able to record the time occupied by the various stages of labour. To require such women to carry or attempt to use a catheter is, in my opinion, running an unnecessary risk; the less they interfere with the patient the better.

The Non-Notifiable Infectious Diseases, such as Measles, Whooping Cough, etc., will be dealt with under deaths from these diseases,

SANATORIUM REPORT

FOR THE YEAR ENDING MARCH 31st, 1905.

To the Chairman and Members of the Sanitary Committee.

GENTLEMEN,

At the close of the financial year, 1904-1905, there were three patients under treatment in the Sanatorium, and from that date till March 31st, 1905, twenty-four fresh cases were admitted, making a total of twenty-seven cases treated during the year.

Two were cases of Diphtheria, one a patient suffering from Measles and occupying a private ward, while the remaining were cases of Scarlet Fever. All were discharged cured, except those who were still under treatment at the end of the year.

The patients were in hospital a total of 1,168 days, giving an average stay of 43 days per patient.

The following table shows the cost of working for the twelve months:—

1905.	EXPENDITURE.	£	s.	d.
Diet of Patients	...	...	76	9 0
Wages and Diet of Nurses	...	...	95	15 6
Laundress	...	...	55	0 0
Curator	...	...	65	0 0
Surveyor's Account	...	...	51	0 1
Tradesmen's Accounts	...	...	38	16 10
Rents, Rates, and Insurance	...	...	19	16 11
Drugs	...	...	3	12 7
Medical Fees	...	...	13	13 0
Conveyance of Patients	...	...	7	16 0
Coal, Coke, and Wood	...	...	40	16 4
Rent of Telephone	...	...	10	10 0
Painting	...	...	7	10 0
Replacing Condemned Goods	...	...	22	8 9
Total		£507	5	0
Fee received for use of private ward	...	£18	1	0

THE COCKINGTON SANATORIUM.

The building was not used during the year. Its cost of maintenance is as follows :—

			£	s.	d.
Caretaker	...	...	6	5	0
Rents, Rates, and Taxes	...	...	51	9	1
Total			£57	14	1

The following table gives the cost of this and previous years :—

				£	s.	d.
1898.	30 Patients cost	...	...	493	13	2
1899.	35 " "	...	...	513	14	11
1900.	42 " "	...	...	564	2	10
1901.	26 " "	...	...	515	15	11
1902.	58 " "	...	...	903	6	6
1903.	26 " "	...	...	570	12	5
*1904.	26 " "	...	...	598	7	5
1905.	27 " "	...	...	507	5	0

*NOTE.—Cockington Sanatorium utilised for the treatment of two cases of Small-pox.

Mr. and Mrs. Arnall and Nurse Hunt have carried out their duties to my entire satisfaction. I have heard nothing but praise from the patients for the treatment they have received.

I am, Gentlemen,

Your obedient servant,

T. DUNLOP,

Medical Superintendent.

DEATHS.

During 1905 the number of deaths registered in the Borough was 472—males 211, females 261.

The gross death-rate is therefore equal to 13·9 per 1,000. If it was permissible to eliminate the deaths of 54 visitors, the rate would be equal to 12·6 per 1,000. To obtain the corrected death-rate, it is necessary to add the deaths of 30 persons occurring in Newton Abbot Workhouse, and of one person dying in a public institution in Liverpool, who belong to Torquay; and subtract the deaths of 12 non-residents who died in the public institutions of this town. The total deaths would therefore be 491, and the corrected rate equal to 14·5 per 1,000 per annum.

The following table gives the Torquay death-rates for recent years, compared with those in England and Wales for corresponding years :—

Year.	Number of Deaths.	Death-rate.	Death-rate excluding deaths of Visitors.	Death-rate of England and Wales.
1901	476*	14·1	12·9	16·9
1902	491*	14·6	13·3	16·3
1903	448	13·3	11·5	15·4
1904	482	14·2	12·4	16·2
1905	491	14·5	12·6	15·2

* No record kept of deaths in Newton Workhouse of Torquay residents.

If the death-rate of 14·5 be multiplied by the factor ·8044 to correct it for sex and age distribution, and so make it strictly comparable with that for England and Wales, it would be equal to 11·6 per 1,000 per annum.

During the year there were 23 inquests held, while eight deaths were uncertified.

DEATHS AT VARIOUS AGE PERIODS.

Of the total of 491 deaths—

					Percentage of total deaths.
53	were under 1 year of age	...	equals		10·8
36	" 1 year and under 5 years	...	"		7·3
12	" 5 years	" 15	"		2·5
15	" 15 "	" 25	"		3·1
155	" 25 "	" 65	"		31·5
220	over 65 years	...	...	"	44·8
Total 491 at all ages.					100·0

The deaths in the various wards are given on Table II., on page 40.

INFANTILE MORTALITY.

The total number of deaths of children under one year of age was 53, or 11 less than in 1904. As there were 522 births registered, the infantile mortality equals 95 per 1,000 births. This is very satisfactory, but I do not think, in a non-manufacturing town like Torquay, this figure should be exceeded. It compares very favourably with that of last year, which was 120, and also with the rate for England and Wales during 1905, which was 128.

Probably the character of the weather during the late summer and early autumn had something to do with it. It has been noticed that if, as we had last summer, there are periodic falls of heavy rain preventing long spells of dry weather, deaths from summer diarrhoea—that most fatal of infant maladies—are much fewer in number.

The following table gives the causes of death among infants for the past five years :—

	1905.	1904.	1903.	1902.	1901.
Measles	5	1	0	1	5
Whooping Cough ...	3	1	3	7	0
Influenza	0	0	0	0	1
Diarrhoea	3	5	3	3	1
Enteritis	4	6	3	3	2
Septic Diseases ...	0	0	1	0	0
Phthisis	0	0	0	1	2
Other Tubercular Diseases	1	0	1	4	2
Bronchitis	4	10	6	12	8
Pneumonia	5	2	1	4	2
Premature Birth ...	11	18	8	15	19
Heart Disease ...	0	0	2	0	1
Accidents	0	0	2	3	1
All other causes ...	17	21	25	37	26
Totals	53	64	55	91	70

The question of infantile mortality is evidently receiving considerable attention from the Local Government Board, as it is this year, for the first time, requiring Medical Officers of Health to fill a table (No. V., page 43), giving exact details as to the cause of death in weeks and months under one year of age.

THE CAUSES OF DEATH.

The causes of, and ages at, death during 1905 will be found in Table IV. at the end of the report.

DEATHS FROM ZYMOTIC DISEASES.

The Zymotic death-rate is the rate caused by deaths from the seven principal zymotic diseases. They are as follows:—Small-pox, measles, whooping cough, scarlet fever, diphtheria, fever (typhus, enteric, and other continued fevers), and diarrhoea.

During the year there were 32 such deaths registered—measles 18, scarlet fever one, whooping cough seven, diphtheria one, fevers two, and diarrhoea three.

The rate is equal to .94 per 1,000 per annum, compared with .38 per 1,000 in 1904. The zymotic death-rate in England and Wales during 1905 was 1.52 per 1,000, so that the rate for Torquay, although considerably higher than that of last year, is much lower than that of the country generally. The cause of the increase is the large number of deaths from measles (18) and whooping cough (seven). The cause of the deaths will be dealt with more fully when considering these diseases.

SMALL-POX.

As previously stated, one case occurred, but no deaths. Details are given under notifiable diseases.

MEASLES.

In my report for 1904, I stated that Measles had been prevalent during the last quarter of the year. The epidemic was at its height during February and March of this year, gradually declined during April, and finally disappeared in May. As Measles is a non-notifiable disease, it is difficult to estimate the number of cases that occurred in the Borough, but if we calculate that 6 per cent. of the cases prove fatal, there must have been between three and four hundred cases, as there were eighteen

deaths registered from this disease. The following table gives the sex and age at death :—

	Under 1 Year.	1—2	2—3	3—4	4—5	5—6	All ages.
Males.	1	1	4	1	0	0	7
Females.	4	1	4	1	0	1	11
Totals.	5	2	8	2	0	1	18

It will be seen that the mortality was greatest among females and also that the period between 2—3 was the most fatal. Of eighteen deaths only one occurred in a child over 5 years age. If it were possible to prevent children under five years catching the disease, the mortality would be very low indeed.

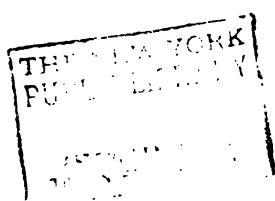
The epidemic may be said to have lasted from the middle November till the beginning of May, and the infant departments of the following schools were closed for periods of three weeks each. The following table gives the percentage attendance in the upper schools after the closure of the infants' departments :—

MEASLES EPIDEMIC, 1904-1905.

Name of School.	Date of Closure of Infants' Department	Percentage Attendance during Closure of Infants' Department.							
		Boys' School.					Girls' School.		
		1st week.	2nd week.	3rd week.	4th week.	5th week.	1st week.	2nd week.	3rd week.
Upton	Nov. 25, '04	90	85.8	90	82	—	81	84	90
Torquay National	Dec. 15, '04	Closed	16th	Dec.	and Xmas.		Closed	16th	Dec.
Ellacombe	Jan. 25, '05	85	78	75	71	77	77.4	75	74.3
Torre	Jan. 31, '05	87	82	88	88	—	84	77	81
St. Mary-Church Priory	Mar. 3, '05	84	82	88	—	—	89	87	91
Victoria Park Infants	Mar. 13, '05	Elder	Children	attend		Ellacombe	National	So	
Cockington C.E. School	Mar. 20, '05	96.1	92.4	93.3	—	—	93	90	85
St. Mary-Church National	Mar. 28, '05	96	96	93.8	95.4	—	92	89	86

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Although it cannot be denied that the attendance at these schools (upper) was to some extent affected, yet I do not consider that it justifies the opinion that in future epidemics the whole schools should be closed.

Here it may be desirable to study the course of the disease during past years, and for this purpose I have prepared the chart annexed. It deals with the years 1896 to 1905 inclusive, and I find during that period that four epidemics have occurred. It is apparent, then, that Measles becomes epidemic almost every 10 years, and we can, to some extent, conclude that all the susceptible elementary school children are attacked during an epidemic, the district then remaining free until another batch of susceptible children appears. This seems to be borne out by the fact that in the last epidemic almost all the deaths occurred among children under 3 years of age.

It may be assumed that the majority of children in the upper schools have either had the disease or are insusceptible to it.

These facts influenced my line of action during the epidemic dealing with school attendance. After consultation with both the Sanitary Committee and the School Attendance Committee I decided, as soon as I had information that an infants' department had been invaded, to close it for three weeks, the upper departments going on as usual.

I also advised that both the Teachers and School Attendance Officers should see that all children, even if coming from infected houses, if they had had measles previously, should attend the upper departments, but should be excluded from the infants' departments.

In this I have been following the advice given by Dr. Newsome, Medical Officer of Health for Brighton, to his Authority, in dealing with an epidemic of Measles during 1904. Under the heading "Quarantine of Children in Infected Households," he writes:—

"It is known that apparently healthy children from infected houses may carry the infection of Scarlet Fever or Diphtheria in their clothes or throats and give it to other children at home. Does the same happen in Measles? It is quite conceivable that a child, not ill with Measles, may convey its infection to others; though not suffering himself from the disease in a recognisable form. I know of no convincing evidence on this point. It is admitted by all that Measles is nearly always, if not always, transmitted by direct personal infection. But in actual practice,

under present conditions, this point may be neglected ; for (a) the majority of children over seven years of age have already had Measles ; and (b) Measles over this age is a non-fatal disease."

He goes on to show that of the total cases of Measles known to have occurred among children in attendance at elementary schools in Brighton, only 22 occurred in boys' departments, only 19 in girls' departments, and 666 in the infants' departments, and that every one of the deaths from Measles was at ages under six.

If such precautions are to be followed in the future, it seems to me that it is essential that a Measles record should be kept of all elementary school children. I also consider that some system ought to be adopted in which either the School Attendance Officer or the Head Teacher of each school should at once notify every case of Whooping Cough, Chicken-pox, Measles, Mumps, Ring-worm or Itch, or any case in which it is suspected that these diseases exist, and also any suspected cases of Small-pox, Diphtheria or Scarlet Fever.

I have been led to these conclusions both by my experience of the last epidemic and by a perusal of a recent report of Dr. Kerr to the London Education Committee on Measles.

He opens with the statement that Measles is the most fatal disease of childhood. He might have added that it is a disease the prevalence and fatality of which have not been much affected by modern sanitary improvements. Statistics show that the mortality is very much greater in infancy and early childhood than at a later age. According to the last published returns of the Registrar General for 1903, 94 per cent. of the total deaths from Measles were those of children under five years old.

Dr. Kerr details an experiment carried out under the direction of the London Education Committee by Dr. Thomas and Dr. Davies, the Medical Officer of Health of Woolwich. The borough was divided into two. In the eastern half an attempt was made to suppress every appearance of Measles in a school by rigorous class closure, while in the western half the system of excluding individual children was followed. The result of the experiment was interesting, and the statistics showed that class closure had been much more costly in interfering with school work than the exclusion of individual children. The loss of attendance under the system of individual attendance was less than half the loss under the other system of class or school closure. Dr. Kerr draws attention to the desirability of having the Measles history of every child kept by the teachers, and in the schools over which he has control there is a system in force by which, when a child enters

school for the first time, these facts are entered on a card, which is kept up to date, so that a teacher at any time knows how many susceptible children there are in his class or school. Dr. Kerr holds that the balance in favour of closure, even at the earliest opportunity, is doubtful, and that later it is without doubt futile. His final conclusions are that in the exclusion of individuals in face of an outbreak of measles the ultimate solution of the problem will be found ; that the exclusion of unaffected children from infected households is necessary only in infants' departments ; and that "school closure for measles can never take the place of teachers specially trained in school hygiene, imbued with the ideals that constitute a 'sanitary conscience,' and working in good hygienic surroundings."

WHOOPING COUGH.

During January, February and March, Whooping Cough was very prevalent in the Upton Ward, and in June in Chelston. Seven deaths were attributable to this cause, all being children under five years of age. The attendance at St. James' Schools was considerably affected, chiefly in the baby classes, but at no time did I consider that the closure of the school would prevent the spread of the disease. Early in July the attendance in the Chelston C.E. Schools, infants' department, became so seriously affected that I felt justified in advising its closure for three weeks. It is in a case like that of the St. James' Schools that the folly and unfairness of the action of the Board of Education in the withdrawal of Article 101* is apparent. If a whole department is closed the average attendance is not affected ; but if, on the score of health, a single class is closed by the Council acting on the advice of the Medical Officer of Health, their whole attendance is lost and the effect upon average attendance and consequent grant is enormous. So that although when one would feel justified in closing a single class, yet the consequence of such action is so disastrous that it resolves itself into a question of either closing a whole department or taking no steps at all. The only remedy for this appears to be the introduction of a system by which, when the attendance has fallen to such an extent as to seriously affect the grant, the department would be closed independently of the question of health.

CHICKEN POX.

Only a few cases came under the notice of the Sanitary Department. After an outbreak in a large private school, all the infected rooms were fumigated.

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CANCER, MALIGNANT DISEASE.

Cancer was responsible for 47 deaths, of whom two were visitors and one occurred in the Newton Abbot Workhouse. In 1904 there were 42, and in 1903, 47. Dr. Tatham, in his analysis of the cause of death during 1903, the last available returns for England and Wales, states that the total deaths attributable to Cancer or Malignant disease amounted to 29,089, exceeding by 2,795 the average number in the previous ten years, corrected for increased population. So that in the country generally there is an undoubted increase of Cancer.

It must be borne in mind that in a health resort such as Torquay, Cancer patients are frequently sent in the hope that the mild climate and bright sunshine may possibly prolong their lives. This materially increases the death-rate from this disease. Again, as I previously stated, no conclusion of any value can be deduced from a bare comparison between the death-rates of two populations very differently constituted as to age and sex. In a community such as Torquay, where the number of persons at advanced ages and of females is greater than that pertaining to the country as a whole, we expect to find a greater number of persons dying from Cancer.

The death-rate from Cancer in Torquay during 1905 was equal to 1·38 per 1000 per annum. If this rate is corrected for age and sex distribution, it would be only 1·08 per 1000. The last published rate for England and Wales is for 1903, when it equalled ·87 per 1000.

AGE AND SEX DISTRIBUTION OF CANCER DEATHS.

	under 30	30—35	35—45	45—55	55—65	65—75	over 75	Totals
Males	1	1	0	1	2	7	2	14
Females	0	1	8	5	6	7	6	33
Total	1	2	8	6	8	14	8	47

In the following table the chief headings under which deaths from Cancer occurred are given :—

REGISTERED DEATHS FROM CANCER (MALIGNANT DISEASE).

Seat of Disease.	Sarcoma.		Carcinoma.		Malignant Disease or Cancer.		Total.
	M.	F.	M.	F.	M.	F.	
Face, Jaw, Tongue	0	0	1	0	1	0	2
Throat and Thorax	0	0	3	1	0	1	5
Oesophagus	0	0	1	0	0	0	1
Stomach and Pylorus	0	0	4	2	1	0	7
Liver and Pancreas	0	0	1	2	0	4	7
Intestines (excluding Rectum) ..	0	0	0	1	0	2	3
Rectum	0	0	0	0	1	1	2
Breast	0	0	0	4	0	6	10
Uterus and Appendages ..	0	1	0	6	0	1	8
Parts not specified	1	0	0	0	1	0	2
Totals	1	1	10	16	4	15	47

SANITARY WORK. 1905.

There have been no changes in the staff of the Sanitary Department during the year. Full details of the work of the Inspectors are contained in their reports, which are appended.

POLLUTION OF STREAMS.

As stated in my last report, steps had been taken to prevent the pollution of the stream running through the Rosery and Recreation Grounds, by having the drainage of several private houses and that of Torre Station, which discharged into it, cut off. This has now been completed, the Railway Authorities having laid down a complete system of sewerage for the Station.

SLAUGHTER HOUSES.

There are eight slaughter-houses in the Borough, one new in the Barton district having been erected. Four are registered, one has a perpetual license, while three require to be licensed each year.

I have inspected them several times during the year, and on the whole found them kept clean and in a satisfactory condition.

April the Local Government Board's model bye-laws were adopted by the Council, with one or two slight modifications. They are now in force and enable us to have the buildings regularly newashed, and enforce other matters of cleanliness.

The fact of having so many private slaughter-houses, and also at a considerable amount of meat is brought in from a distance by train, renders the proper inspection of meat impossible.

No complaints reached me during the year of the nuisance at present used to arise from the spreading of slaughter-house manure outside the district.

SALE OF FOOD AND DRUGS ACT.

Samples are taken by the County Police. The following is a summary of their action under the Act :—

Article.	No.	Result of Analysis.	Remarks.
Beer	6	Genuine	1 sample was deficient in milk fat 6·7%. Vendor cautioned by Police.
Butter	6	"	1 sample contained 19·7% added water. Vendor fined 31s. 6d. and 10s. 6d. costs.
Cheese	8	"	1 sample deficient in milk fat 16%. Vendor fined 40s. and 16s. 6d. costs.
Milk	46	39 genuine 7 not genuine	1 sample deficient in milk fat 4·7%. Vendor cautioned by Police.
Sugar	6	Genuine	1 sample contained 8% added water. Vendor to pay costs of prosecution, 6s.
Tea	6	"	1 sample contained added water 9·17%. Vendor fined 4s. 6d. and 15s. 6d. costs.
Sticky	12	"	1 sample was deficient in milk fat 11%. Vendor fined 5s. and 12s. 6d. costs.
			1 sample, although genuine, was coloured with annatto.
Total	88		

It is satisfactory to note that after the issue of the circular to Milk Dealers in the Borough and Dairy Farmers on the use of boracic acid as a preservative in milk, no samples were found to contain it.

MILK.

The system of inspecting both the cowsheds and dairies in the Borough, and also the outside dairy farms from which many dealers receive their supply, is carried out twice a year. Particulars are obtained of the condition of the cowsheds as to cleanliness, lighting, ventilation, and paving; the washing of milk vessels; cleanliness of dairies, etc.; the water supply as regards its freedom from pollution; and the number and condition of the cows being milked.

After these inspections a complete register is compiled of all dairies and cowsheds in the Borough, together with the farms outside which supply them with milk, etc. This register is printed in the form of a bill, and is posted up throughout the town, copies being forwarded to all dairymen and farmers concerned. Such bills are a guarantee that we are satisfied with the sanitary state of the places inspected, and is in force for six months. Thus two thorough inspections are made each year. It is satisfactory to be able to report that the farmers meet us with every courtesy, and endeavour to carry out any improvements that are suggested. The dairies everywhere are beautifully kept, and there is a noticeable improvement in the condition of the cowsheds. Cowsheds, which in the past rarely saw a whitewash brush, are now limewashed twice a year; cobble paving, which is almost impossible to keep clean, has in many places been replaced by brick paving. It must also be remembered that in South Devon, for the greater part of the year, the cows are kept out night and day, only being brought in at night from the middle of December to the end of March, so that the animals live under the best conditions possible.

It is to be regretted that although improvement is taking place in the proper housing of cows, yet there is little change in the method of milking. Most of the milking is done by men and boys, who in most instances come straight from the work they are at without any idea of washing their hands before beginning, and it is seldom that attention is given to the teats and udders of the cows, which are often soiled with excrement. Milking appears to be an operation in which speed is the great consideration, little regard being paid to cleanliness. Too much faith is put in the fact that the milk is strained. Of what use is this if the milk contains a solution of the substance that has fouled it? Dairy farmers seem to have little idea how easy it is for milk to become contaminated and thus cause an immense amount of sickness, especially among children.

There are 92 registered dairymen and cowkeepers in the Borough receiving milk from 75 farms situated outside the district,

FACTORY AND WORKSHOPS.

Details of the working of this Act may be found in the reports of the Sanitary Inspectors. As far as practicable they endeavour to visit each workshop and outworker once a year. After three years' experience they soon discovered certain places which require special attention, while others are always found what they ought to be. Fortunately, any requirements of the Inspectors have always been carried out on verbal notice to the occupiers.

BAKEHOUSES.

I always inspect these premises in company with the Inspectors. There are 57 on the register, two of which have been granted certificates as underground bakehouses. For the most part they are usually found clean and well looked after. Occasionally I have not been satisfied that the limewashing has been done recently, but I have only to ask, for it to be done.

OUTWORKERS.

Very little work is done by outworkers. In order that I may obtain the lists of these without friction, I have drawn up a printed circular calling the attention of the employers to the necessity of furnishing me with the names. In many cases we find that the outworkers are persons in a small way of business for themselves. We have not had to complain of the condition of their rooms and in no instance has a case of infectious sickness been reported from such houses.

OFFENSIVE TRADES.

Tripe boiling appears to be the only offensive trade carried on in the Borough. One building, situated in Upton, is suitable for the purpose, and is always found in a clean and satisfactory condition. Towards the end of 1904 another establishment was discovered in Hele, and as in its then condition it was unsuitable for the purpose, the owner was called upon to carry out such alterations as would insure the prevention of nuisance. After considerable delay these alterations were effected and permission given to carry on the work.

There are several marine stores in the Borough, and although they are not particularised as offensive trades, yet the owners must have the permission of the Sanitary Authority to carry them on. Several inspections of these places have been made.

COMMON LODGING-HOUSES.

There are five registered common lodging-houses in the Borough. They have been regularly inspected during the year, and on the whole were found to be kept in a fairly satisfactory state. In one instance overcrowding of a room was detected, but it was discontinued on a warning being sent to the owner.

HOUSING OF THE WORKING CLASSES.

The members of the working classes appear to be well housed. Many houses of low rent are erected every year, and are no sooner ready for habitation than they are occupied. Complaints of overcrowding are rare. A house-to-house inspection was made of a terrace of tenement houses in Upton. Some dirty rooms, sinks, etc., were found and afterwards remedied.

HOUSE DRAINAGE.

The inspection and testing of the drains of all new houses is done by the Sanitary Inspectors, some 70 systems having been tested during the year.

The granting of Sanitary Certificates by the Corporation.

The number of certificates granted during the year was 66; in 1903 there were 89, and 66 in 1902. This is very satisfactory, as it is an assurance that these houses have had all their sanitary arrangements brought up to date. It also shows that the public are beginning to recognise the necessity for some assurance that the drainage of their houses is in a thoroughly sanitary condition too often, however, intending tenants are satisfied with the verbal assurance of agents or owners that this is the case, only to find that when a test is made the drains are defective. I consider that no person should be satisfied with anything less than a certificate not more than three years old. It is well known that in Torquay, where large numbers of the houses are built on the sides of the hills, there are frequent subsidences which are likely to crack the joints of drain pipes; this allows the roots of trees and shrubs to find their way into the pipe, where they soon form a thick matting, causing complete blocking of the drains. I have on several occasions seen pipes so filled that it has been impossible to pass a walking stick through them.

FACTORY AND WORKSHOPS ACT, 1901.

s, Workshops, Laundries, Workplaces, and Homework

1.—INSPECTION.

INSPECTIONS MADE BY SANITARY INSPECTORS OR INSPECTORS OF NUISANCES.

Premises.	Number of		
	Inspections.	Written Notices.	Prosecutions.
g Factory Laundries)	—		
g Workshop Laundries)	175	33	Nil
.. .. .	30		
s' PREMISES	10		
Total	215	33	Nil

2.—DEFECTS FOUND.

Particulars.	Number of Defects.			Number of Prosecutions.
	Found.	Remedied.	Referred to H.M. Inspector.	
<i>Under the Public Health Acts :—</i>				
sanliness	22	22	0	0
ntilation	4	4		
ng	2	2		
ainage of floors				
nces				
y { insufficient	5	5		
tions { unsuitable or defective				
{ not separate for sexes				
<i>Under the Factory & Workshop Act :—</i>				
upation of underground hake-101)				
pecial sanitary requirements for es (SS. 97 to 100)				
egards lists of outworkers (S. 107)				
work to be { unwholesome (S. 108)				
premises { infected (S. 110)				
earing apparel to be made in infected by scarlet fever or (S. 109)				
ces				
Total	33	33	Nil	Nil

ng those specified in Sections 2, 3, 7, and 8 of the Factory Act as remediable
blic Health Acts.

22 of the Public Health Acts Amendment Act, 1890, has been adopted.

3.—OTHER MATTERS.

Class.	Number.	
Matters notified to H.M. Inspectors of Factories :—	Nil	
Failure to affix Abstract of the Factory and Workshop Act (S. 133)	1	
Action taken in matters referred by H.M. Inspectors as remediable under the Public Health Acts, but not under the Factory Act (S. 5) { Notified by H.M. Inspector Reports (of action taken) sent to H.M. Inspectors		
Other		
Underground Bakehouses (S. 101) :—		
Certificates granted during the year	0	
In use at the end of the year	2	
Homework :—	Number of	
<i>Lists of Outworkers* (S. 107) :—</i>	Lists.	Outwa
Lists received	18	36
Addresses of outworkers { forwarded to other Authorities received from other Authorities		
Homework in unwholesome or infected premises :—	Wearing Apparel.	Other
Notices prohibiting homework in unwholesome premises (S. 108)		
Cases of infectious disease notified in homeworkers' premises	Nil	Nil
Orders prohibiting homework in infected premises (S. 110) ..		
Workshops on the Register (S. 131) at the end of the year.		
Important classes of workshops, such as workshop bake-houses, may be enumerated here. { Bakehouses	57	
Total number of workshops on Register (including homeworkers' premises) ..	342	

* The Lists should be received twice in the year. The year's figures required in Table are then obtained by adding together the two half-yearly totals.

VITAL STATISTICS OF WHOLE DISTRICT DURING 1905 AND PREVIOUS YEARS.

Year.	Population estimated to Middle of each Year.	Births.		Total Deaths Registered in the District.			Deaths of Non-Residents registered in Public Institutions in the District.		Deaths of Residents registered in Public Institutions beyond the District.		NETT DEATHS AT ALL AGES BELONGING TO THE DISTRICT.	
		Number.	Rate.*	Under 1 year of age		At all ages.	Number.	Rate.*	10	11	Number.	Rate.*
				Number.	Rate per 1,000 Births registered.							
1	2	3	4	5	6	7	8				12	13
1895.	33100	652	19.6	102	155	583	17.6	41	55		528	15.9
1896.	33200	650	19.5	107	163	569	17.1	43	41		528	15.9
1897.	33300	630	18.9	81	128	502	15.0	43	83		419	12.5
1898.	33400	626	18.7	83	132	529	15.5	50	70		459	13.7
1899.	33500	573	17.0	84	143	570	17.0	31	49		529	15.5
1900.	33600	559	16.6	70	124	488	14.5	41	58		430	12.8
1901.	33625	556	16.5	70	125	504	15.0	51	28		476	14.1
1902.	33625	540	16.0	84	155	529	15.7	63	38		491	14.6
1903.	33800	536	15.9	51	95	455	13.4	57	28	21	448	13.3
1904.	33850	530	15.7	64	120	473	13.9	42	20	29	482	14.2
Averages for years 1895-1904.	33500	585	17.4	80	134	520	15.5	46	47	—	479	14.2
1905.	33900	522	15.4	50	95	472	13.9	46	12	31	491	14.5

* Rates in columns 4, 8, and 13 calculated per 1,000 of estimated population.

NOTE.—The deaths included in Column 7 of this table are the whole of those registered during the year as having actually occurred within the district or division. The deaths included in Column 12 are the number in Column 7, corrected by the subtraction of the number in Column 10 and the addition of the number in Column 11.

By the term "Non-residents" is meant persons brought into the district on account of sickness or infirmity, and dying in public institutions there; and by the term "Residents" is meant persons who have been taken out of the district on account of sickness or infirmity, and have died in public institutions elsewhere.

The "Public Institutions" to be taken into account for the purposes of these tables are those into which persons are habitually received.

TABLE II.
VITAL STATISTICS OF SEPARATE LOCALITIES IN 1904-5.

LOCALITIES.	Population Census 1901.	1904.			1905.		
		Births regis- tered.	Deaths at all Ages.	Deaths under 1 year.	Births regis- tered.	Deaths at all Ages.	Deaths under 1 year.
Torre	3851	50	51	5	50	76	4
Waldon	3576	42	45	4	39	42	4
Upton	4339	92	84	13	87	63	8
Ellacombe... ..	5911	124	82	16	118	82	13
Strand	3129	51	50	11	52	43	5
Torwood	3644	21	51	2	27	37	0
St. Mary-Church...	3312	47	49	6	62	52	7
Babbacombe	3264	63	36	4	52	46	7
Chelston	2599	34	25	3	30	31	2
The Borough	33625	524	473	64	517	472	50

NOTE.—This table only includes deaths registered in the district.

TABLE III.

**CASES OF INFECTIOUS DISEASE NOTIFIED DURING THE
YEAR 1905.**

TABLE DISEASE.	Cases notified in whole district.							Total cases notified in each locality.							No. of cases removed to hospital fr'm each locality										
	At all ages.	At Ages+—Years.						Torre	Waldon	Upton	Ellacombe	Strand	Torwood	S. Marych.	Babo'mbe	Chelston	Torre	Waldon	Upton	Ellacombe	Strand	Torwood	S. Marych.	Babo'mbe	Chelston
		Under 1	1 to 5	5 to 15	15 to 25	25 to 65	65 and upwards																		
Small-pox ..	1	—	—	—	—	1	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—
Diphtheria ..	6	—	—	—	4	1	1	—	3	—	3	—	—	—	—	—	2	—	2	—	—	—	—	—	—
Scarlatina ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Oranous croup ..	5	1	—	—	—	1	2	1	1	1	7	2	7	4	—	3	—	—	—	—	—	—	—	1	—
Typhoid fever ..	36	—	8	25	2	1	—	1	5	2	7	2	7	4	—	8	1	4	2	4	2	2	4	—	5
Erysipelas ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Scarlet fever ..	10	—	2	2	—	6	—	1	1	1	4	—	2	1	—	—	1	—	1	—	—	—	—	—	—
Whooping fever ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmuzzled fever ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General fever ..	1	—	—	—	—	1	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Measles ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Totals ..	59	1	10	31	5	11	1	3	10	4	14	3	9	5	3	8	2	6	2	7	3	2	4	1	5

NOTES.—The localities adopted for this table are the same as those in Tables II. IV.

Isolation Hospital :—Newton Abbot Road, outside the Borough.

TABLE IV.

CAUSES OF, AND AGES AT, DEATH DURING YEAR 1905.

CAUSES OF DEATH.	DEATHS AT THE SUBJOINED AGES OF RESIDENTS OCCURRING IN OR BEYOND THE DISTRICT							Total Deaths whether of Residents or non Residents in Public Institutions in the District
	All ages.	under 1	1 and under 5	5 and under 15.	15 & under 25.	25 & under 65.	65 & upwards	
Small-pox	—	—	—	—	—	—	—	—
Measles	18	5	12	1	—	—	—	—
Scarlet Fever	1	—	—	1	—	—	—	—
Whooping-cough	7	3	4	—	—	—	—	—
Diphtheria and Membranous croup	1	—	—	1	—	—	—	—
Croup	1	—	1	—	—	—	—	—
Fever { Typhus	—	—	—	—	—	—	—	—
Enteric	2	—	—	—	—	2	—	1
Other continued	—	—	—	—	—	—	—	—
Epidemic influenza	11	—	—	—	—	4	7	—
Cholera	—	—	—	—	—	—	—	—
Plague	—	—	—	—	—	—	—	—
Diarrhoea	3	3	—	—	—	—	—	—
Enteritis	7	4	—	1	—	—	2	—
Puerperal fever	—	—	—	—	—	—	—	—
Erysipelas	—	—	—	—	—	—	—	—
Other septic diseases	1	—	—	—	1	—	—	1
Phthisis	45	—	—	—	8	33	4	11
Other tubercular diseases	8	1	3	1	1	2	—	2
Cancer, malignant disease	47	—	—	1	—	24	22	4
Bronchitis	42	4	2	2	—	3	31	3
Pneumonia	25	5	5	1	—	6	8	1
Pleurisy	2	—	—	—	—	1	1	—
Other diseases of respiratory organs	10	—	—	—	—	5	5	—
Alcoholism	7	—	—	—	—	5	2	—
Cirrhosis of liver	—	—	—	—	—	—	—	—
Venereal diseases	3	3	—	—	—	—	—	1
Premature birth	11	11	—	—	—	—	—	—
Diseases and accidents of parturition	2	—	—	—	—	2	—	—
Heart diseases	21	—	—	—	—	11	10	—
Accidents	6	—	—	—	—	3	3	1
Suicides	3	—	—	—	1	1	1	—
All other causes	207	14	9	3	4	53	124	20
All causes	491	53	36	12	15	155	220	46

TABLE V.

INFANTILE MORTALITY DURING THE YEAR 1905.

DEATHS FROM STATED CAUSES IN WEEKS AND MONTHS UNDER ONE YEAR OF AGE.

CAUSE OF DEATH.		Under 1 Week.	1-2 Weeks.	2-3 Weeks.	3-4 Weeks.	Total under 1 Month.	1-2 Months.	2-3 Months.	3-4 Months.	4-5 Months.	5-6 Months.	6-7 Months.	7-8 Months.	8-9 Months.	9-10 Months.	10-11 Months.	11-12 Months.	Total Deaths under One Year.
ALL CAUSES.	Certified	9	3	3	4	19	4	2	4	3	4	2	2	3	2	3	3	51
	Uncertified	1			1	2												2
Common Infectious Diseases.	Small-pox					—												—
	Chicken-pox					—												—
	Measles					—					1			1	1	1	1	5
	Scarlet Fever					—												—
Diarrhoeal Diseases.	Diphtheria: Croup					1												3
	Whooping Cough			1		—			1				1		1			1
	Diarrhoea, all forms					—												—
	Enteritis				1	1		1	1	1								4
Wasting Diseases.	(not Tuberculous)					—												—
	Gastritis, Gastro-intestinal Catarrh			1		1						1		1				3
	Premature Birth	7	2	1	1	11												11
	Congenital Defects					—	1											1
Tuberculous Diseases.	Injury at Birth					—												—
	Want of Breast-milk					—												—
	Atrophy, Debility, Marasmus					—	2		1									3
	Tuberculous Meningitis					—												—
	Tuberculous Peritonitis:					—			1									1
	Tabes Mesenterica					—												—
	Other Tuberculous Diseases					—												—
	Erysipelas					—												—
	Syphilis					—	1	2		1								4
	Rickets					—												—
	Meningitis					—												—
	(not Tuberculous)					—												—
	Convulsions	1		1		2		1		1		1						5
	Bronchitis			1	1	2				1					1			4
	Laryngitis					—												—
	Pneumonia					—					1		1		1	2		5
	Suffocation, overlaying					—												—
	Other Causes	2	1			3												3
		10	3	3	5	21	4	2	4	3	4	2	2	3	2	3	3	53

District (or Sub-Division) of NEWTON ABBOT.

POPULATION.

Births in the year { legitimate . 507.
 illegitimate . 15.

Estimated to middle of 1905.
 33,900.

Deaths from ALL CAUSES AT ALL AGES, 491.

BOROUGH OF TORQUAY.

SANITARY INSPECTORS' REPORTS.

CHIEF SANITARY INSPECTOR'S REPORT.

TOWN HALL CHAMBERS,

12th February, 1906.

*To the Mayor, Aldermen, and Councillors of the
Borough of Torquay.*

GENTLEMEN,

I have the privilege to lay this, my Twenty-Eighth Annual Report, before the Urban Sanitary Authority.

It will not be found to differ much, either in the nature or quantity of the work done, from its predecessors.

The duties principally consist in the inspection of premises upon complaint or after infectious disease has occurred; or at request of agents or owners of property for sanitary repairs prior to re-letting, and sometimes sale of, the property.

HOUSE INSPECTION.

One hundred and seven thorough house inspections were made, of which thirty-four were put in such a good sanitary condition that satisfactory sanitary reports were issued. Eighteen of these were superior houses let for more or less lengthy terms; the others were ordinary small houses and shops, where the owners did the necessary works to abate insanitary conditions and requested the official approval of the same.

DISTRICT INSPECTION.

A house-to-house inspection of the thirty-two houses comprising Rosery Cottages, Chelston, was made and resulted in the finding of indoor sinks in all cases, a most prolific source of sore throats as proved by many of the occupiers suffering from them, also the sanitary conveniences were scarcely partitioned off at all from the scullery-washhouse, and in some instances food was discovered placed on the flat roofs of the w.c.'s.

Letters were written to all the persons concerned, and so far the result has been that the requisite remedial measures have been adopted in sixteen of the cottages.

I am pursuing this matter till all have been treated, which I trust to be able to do as usual without recourse to legal proceedings.

TORRE STATION.

The drainage of Torre Railway Station having for a long time caused trouble by discharging into a brook, which runs through the Rosery to the Bay, has at last been properly tackled, and in the early summer a scheme was drawn up, whereby the whole system could be carried into the Avenue Road sewer.

More than a quarter of a mile of pipes were laid, with inspection chambers at proper intervals, up the back approach to the Station and across the coal-truck lines to the up-platform, where suitable ventilators were fixed. The new system has worked well, as reported to me by the Engineering Inspector from Newton quite recently. A further improvement in the provision of separate conveniences for the Station men is now in hand.

TESTS AND CORRESPONDENCE.

The number of tests of various kinds, which were applied to drains, was 207; and 305 letters, reports and notices were written in connection with the business of the Department.

DETAILS OF OPERATIONS.

A brief summary of the various sanitary operations executed in the premises visited may not be unworthy of a passing notice. These prove to be quite up to the average in volume and importance, and are classified thus:—

- 56 New sanitary conveniences and water supply were fixed.
- 54 New soil pipes were put outside buildings and ventilated.
- 155 Intercepting traps with fresh air inlets and chambers were built,

- 57 New sets of house drains were laid.
- 26 Old masonry drains or traps were abolished.
- 3 Back yards were paved and drained.
- 12 New water supplies from the main were fixed.
- 88 Premises were limewashed or cleansed and disinfectants supplied.
- 12 Ashbins provided or dungpits roofed and covered.
- 41 Offensive accumulations were removed.
- 143 New gully traps to sinks were fixed.
- 24 Fumigations took place, eleven being after Phthisis.
- 6 New roofs were put on, in place of dilapidated ones.

This gives a total of 704 separate operations, as compared with 537, during the year 1904—a substantial increase under almost all the headings.

NEW BUILDINGS.

The number of new buildings erected was 15, as compared with 33 last year, and like those in that period were chiefly built in the Chelston Ward.

FACTORIES AND WORKSHOPS: BAKEHOUSES.

The bakehouses, workshops and workplaces were visited and found to be generally in an improved condition. The number is, unfortunately, diminishing slightly in the dress-making line of business.

The total is classified as follows:—

- 21 Dressmakers and milliners.
- 11 Plumbers and painters.
- 7 Coachbuilders or cycle works.
- 9 Tailors.
- 5 Laundries.
- 8 Builders and carpenters.
- 2 Printers.
- 5 Watchmakers.

Also 19 bakehouses. These latter, it must be stated, have very much improved in cleanliness and ventilation, and on the whole are in creditable condition.

The milkshops and dairies have also been inspected periodically, and the same report may be made of them; two exceptions to this rule have last year conformed to sanitary requirements and are now in line with the rest. The cowsheds outside the Borough, in Cockington Parish, were inspected each half-year with the Medical Officer, and found in good order.

As considerable alterations were being carried out at one of the principal hotels, I seized the opportunity to get the sanitary arrangements in the basement, which were of an obsolete and

ensive type (and in fact causing injury to the health of the servants occupying the rooms contiguous), entirely re-modelled on the best system; the work has been done and an excellent improvement, well appreciated, has been effected.

As usual, I have the pleasure to report that it has not been necessary for me to advise any legal notices to be issued, or compulsory steps to be taken, to enforce the execution of works and necessary to be done; thus testifying to the general desire of owners of property and others concerned to march with the times, and so maintain Torquay in her well-earned place as a premier health resort.

I am, Mr. Mayor and Gentlemen,

Yours obediently,

CHARLES MACMAHON,

C.R. San. Inst., A.M.B. Inst. Public Health;

Chief Sanitary Inspector and Surveyor of New Buildings.



ASSISTANT SANITARY INSPECTOR'S REPORT.

TOWN HALL CHAMBERS,
TORQUAY.

February 3rd, 1906.

*To His Worship the Mayor, and to the Aldermen and
Councillors of the Borough of Torquay.*

GENTLEMEN,

I have pleasure in making this my Eighth Annual Report to the Council for the year ending December 31st, 1905, dealing with that portion of the Borough under my supervision, viz., the wards of Torwood, Strand, Upton, and Ellacombe.

One hundred and twenty-five houses and premises have been visited and inspected on receipt of complaint, or by request, and forty-five smoke and twenty-nine hydraulic tests applied to the drains in various instances.

Ninety-two notices were served to abate nuisances, and of these eighty-five were preliminary and seven legal.

Ninety visits of inspection were made to premises where work was in progress, and also one hundred and nine smoke and seventy-one hydraulic tests applied to the drains during and after alterations to same.

Upon application being made for Sanitary Certificates, twenty-four houses and premises have been examined and reported upon, and on completion of the work found necessary to comply with the requirements laid down by the Council, certificates were granted in fifteen instances.

The 10s. testing fee was paid in each case, a total of £12 received.

Certificates were also granted for four other houses, where on complaint or illness the drains were found defective and were

afterwards relaid and other work carried out to meet the requirements for a certificate.

In connection with this work sixty-five smoke and sixty-one hydraulic tests were made, and thirty visits of inspection made while work was in progress.

In connection with New Buildings in my district, one hundred and three smoke tests were applied to the drains of fifty-nine houses and premises, and fifty-five houses were examined on completion and certified as fit for habitation.

Included in this was the extensive additions and alterations to villa "Syracusa," which has now been converted into a fine "Hydropathic" establishment; a new system of drainage was laid down and the house equipped with all the latest appliances.

A large number of visits were paid, and tests applied to the drains while the work was in progress.

SUMMARY OF STRUCTURAL WORK.

- 45 New sets of house drains laid.
- 4 Old masonry drains found and abolished.
- 58 Intercepting traps, with fresh air inlets fixed.
- 68 Inspection chambers to drains built.
- 33 New sanitary conveniences with water supply fixed.
- 14 Soil pipes fixed outside houses and ventilated.
- 50 Iron and brick traps removed and earthenware gullies fixed.
- 14 Old pan closets removed.
- 4 Water supplies laid on to w.c.'s found to be without.
- 4 Taps with water supply direct from main fixed.
- 21 Choked drains cleared.
- 48 Waste pipes from baths, lavatories, and sinks trapped.
- 10 Ashbins for house refuse provided.
- 7 Offensive accumulations removed.
- 3 Nuisances from keeping fowl and animals abated.
- 20 Dirty premises limewashed and cleaned.
- 7 Nuisances from stables and manure pits abated.
- 50 Premises disinfected.
- 9 Defective yards paved.
- 15 Drains ventilated.
- 13 Old masons traps abolished.
- 1 Cellar dwelling closed.
- 1 Cesspool abolished.

Total 499

As in the previous year, a considerable amount of time has again been taken up in connection with the inspection and examination of premises under the Factory and Workshop Act.

Description of Trade.	Number.	No. of workrooms or workplaces
Laundries	27	50
Dressmaker and Milliner	21	34
Corset Maker	1	1
Tailors	14	17
Bootmaker	3	3
Saddler and Harness Maker	6	6
Sailmaker	2	2
Coachbuilder	1	3
Wheelwright	1	2
Shoeing Smith	2	2
Wood Turner	1	1
Upholsterer and Cabinet Maker	5	17
Printing Works	4	10
Plumbers	11	11
Painters and Decorators	10	10
Builders	8	22
Watchmakers and Jewellers	4	4
Dye Works	1	1
Photographers	2	4
Picture Framers	1	1
Blind Maker	1	3
Umbrella and Trunk Maker	2	2
Marble Masons	2	2
Cycle Works	3	7
Electro-plate Works	1	1
Quarries	5	5
Ironmonger and Iron Founder	2	6
Bakers and Confectioners	19	19
Total ...	160	246

In connection with this work twenty-two written or verbal notices were given to remedy the following defects —

Defects	Notices
Foul and Defective w.c.'s	4
Dirty premises	17
Overcrowding	1
Total ...	22

During the month of May, and again in October, I have made the half-yearly inspection of forty-four Dairies, Milkshops, and Cowsheds in my district; in several instances it was necessary to enforce limewashing, but in other respects the places were found in a satisfactory condition.

Also during May, and again in November—December, the dairies and Cowsheds on thirty-eight farms outside the Borough, and situate in the following districts, have been visited and inspected with the Medical Officer in regard to the supply of milk, etc., sent into the town:—

Garabridge.	Wrangaton.	Brent.	Totnes.
Dainton.	Abbotskerswell.	Marldon.	Bovey.
Kingskerswell.	Paignton.	Churston.	

It is gratifying to note the marked improvement which has actually taken place in the cleanliness and general condition of the Cowsheds since this work was undertaken.

In connection with Common Lodging Houses, during the year five of these premises have come under my supervision and have been periodically inspected.

Two houses changed hands and were re-registered.

One additional house has been registered during the year, the drains being previously overhauled and found to be old masonry drains; these were abolished and pipe drains laid throughout.

One case of overcrowding was detected and abated, and the keeper of the house cautioned.

One house was found being used as a Common Lodging house and was unregistered, and proved on examination to be unfit for the purpose; on notice being given the premises were vacated.

With regard to work in connection with Infectious and other diseases, thirty-eight rooms in various houses were disinfected after the following cases:—

- 1 Small Pox,
- 3 Enteric Fever,
- 13 Scarlet „
- 2 Diphtheria,
- 3 Cancer,
- 1 Chicken Pox,
- 9 Phthisis.

Also 12 rooms in a Consumptive Home were disinfected previous to the premises being closed.

The drains of the five houses in which the Enteric and diphtheria cases occurred were examined and tested, and in each instance serious defects were found, with the result that the drains were relaid.

In reference to the above-mentioned case of Small Pox, which occurred in a Common Lodging House in my district, on the case being notified the house was at once visited, and on removal of the patient to the Isolation Hospital, all the bedding was removed and certain portions destroyed; the rest was disinfected in the new steam disinfecter. The room was also thoroughly disinfected and afterwards cleansed and limewashed, with the happy result that no further cases occurred.

The disinfection of rooms after cases of Phthisis is optional with the occupiers, and though in every instance offers are made to disinfect, too often this is either refused or ignored.

The following comparative table for the last five years will shew the result of this work in my district:—

Year.	No. of cases.	No. of disinfections.	Refusals.
1900	42	20	22
1901	45	14	31
1902	25	9	16
1903	12	0	12
1904	20	8	12
1905	17	9	8
Total ...	161	60	101

A house-to-house inspection was made of a block of 14 tenement houses containing two, three, and four families, and as a result it was found necessary to serve notices to abate nuisances found from

One cellar dwelling occupied by two persons,
Choked drains,
Filthy and defective w.c.'s,
Dirty premises,
Defective floors.

Office work, as usual, has demanded a certain amount of time in regard to the keeping of the necessary books and records of work, and in correspondence.

I am, Mr. Mayor and Gentlemen,
Yours obediently,

WILLIAM B. WATSON,

*Cert. R. San. Inst., Sanitary Inspector, and
Inspector of New Buildings, Workshops, and Dairies, etc.*

ASSISTANT SANITARY INSPECTOR'S REPORT.

*To His Worship the Mayor, Aldermen, and Councillors of the
Borough of Torquay.*

GENTLEMEN,

The following account of work done in the St. Mary-Church District during the year ending 31st December, 1905, constitutes my Fifth Annual Report.

HOUSES VISITED ON COMPLAINT.

Sixty-seven different premises were visited on receipt of verbal or written complaints. The following table shows the nature of those complaints:—

Defective drains	16
Choked drains	7
Defective flush cisterns	4
Keeping of animals	13
Manure and offensive deposits	11
Damp or dirty premises	6
Trade nuisances	7
Overcrowding	1
Fouled well	1

The following is a list of improvements effected, to abate the nuisances found on investigating the above complaints:—

Drains relaid or repaired	17
Choked drains cleared	7
Flush cisterns provided or repaired	10
Animal nuisances abated	13
Offensive deposits removed	11
Premises cleaned or repaired	6
Trade nuisances abated	7
Overcrowding abated	1
Sample of well water analysed and found safe	1

A total of one hundred and fifty-eight visits to premises and twenty-one smoke tests were made in the execution of this work.

According to our usual custom, prior to the Easter Holidays, the Race Course was visited for the purpose of inspecting the sanitary conveniences provided for the annual Race Meeting. It was then found that the number and suitability of these had been increased, thus obviating any complaints from the public.

PREMISES VISITED BY REQUEST.

Thirty-two premises were visited at the request of owners or occupiers, and in some instances builders wished me to test work executed by them, thus bringing under my supervision work which would not otherwise have been tested.

Defects were found in twenty-seven of these houses. Eighteen drains were relaid throughout, and nine were thoroughly repaired. Thirteen sanitary certificates were issued. The sum of seven pounds ten shillings was received in drain-testing fees, being an increase of two pounds compared with last year.

In carrying out this work, one hundred and forty-six visits, one hundred and ten smoke tests, and seventeen water tests were made.

NOTIFIABLE AND OTHER DISEASES.

Ten houses were visited in consequence of there having been infectious disease therein. Five were cases of scarlet fever, two erysipelas, one of each of diphtheria, typhoid fever, and chicken pox. Eight rooms were fumigated. Two defective drains were relaid entirely, and disinfectants were supplied in seven cases.

Six deaths from phthisis were reported. Four of these premises were disinfected with formalin, and the other two disinfected by the occupiers of the premises concerned.

Two other rooms were disinfected, one in which death from cancer had occurred, and the other from which a consumptive patient had removed.

Last year, 1904, seven deaths from phthisis were reported, and eight rooms were disinfected.

NEW BUILDINGS.

Thirty-one new buildings and houses to which additions or alterations were made were visited during the year. In all cases

the drains were tested in sections with smoke or water. Inspection chambers are now constructed on the line of drainage in all new buildings, to facilitate cleansing and clearing the drain should occasion arise. Seventeen drainage and twenty-two habitation certificates were issued in 1905. This shows an increase on last year, 1904, when twenty buildings were visited, and thirteen drainage and thirteen habitation certificates were granted.

During the year 1905, a total of more than one thousand feet of new sewers was laid to develop building estates in this district. On one of these estates it is proposed to erect forty houses, of which five have been built up to the present time.

These sewers were tested in lengths of about fifty to eighty feet. Last year, 1904, only three hundred and fifty feet of new sewers were laid.

A total of one hundred and eighteen visits, one hundred and two smoke tests, and four water tests were made in connection with new buildings and new sewers.

HOUSE TO HOUSE INSPECTION.

Under this head thirty-two houses were visited. Eighteen defective drains were relaid and one repaired. Six water closets, which were without a means of flushing, were provided with water-waste preventers. Fourteen defective yards were repaved or repaired. One hundred and forty-eight visits, thirty-seven smoke, and two water tests were made during this systematic inspection.

DAIRIES, COWSHEDS, AND MILKSHOPS.

These were inspected twice during the year at the usual times, namely, before the cows were turned out and before they lay in again, and were found in a satisfactory condition. The paving, lighting, and drainage of most of the cowsheds will compare very favourably with those of any district. I regret to find, however, that several occupiers require to be visited oftener than twice annually, or I fear the limewashing would not be carried out as required by our bye-laws.

Two new cowsheds were built in the year, plans having been submitted to the Council. I visited both on many occasions during their erection, to test the drains and to see that the requirements as to paving, lighting, and water supply were

fulfilled. One other cowshed, which is only used for milking purposes during the summer months, has been paved and supplied with water.

A total of ninety-four inspections were made relating to Dairies and Cowsheds in this district.

After the half-yearly inspection of the Dairies and Cowsheds within the district, I accompanied the Medical Officer of Health and inspected twenty-five dairy farms outside the Borough. From these a considerable part of our milk supply is obtained. In all cases we were courteously received, and the farmers shewed great willingness to carry out our suggestions. The farms were on the whole found in a satisfactory state.

SLAUGHTER HOUSES.

There are now seven slaughter-houses in St. Mary-Church and Babbacombe, a new one having been built at Barton according to plans sanctioned by the Borough Council. During the year copies of our new bye-laws affecting slaughter-houses were sent to all occupiers. A circular which related to Anthrax was received from the Board of Agriculture, and posted to occupiers or owners of slaughter-houses.

Periodical visits were made to slaughter-houses, and similar visits were paid to a tripe-boiling establishment, this being an "offensive trade" under Section 112 of Public Health Act, 1875.

BAKEHOUSES.

One new bakehouse having been opened and one discontinued during the past year, the number still stands at seventeen. These were visited in due season by the Medical Officer and myself, and in all cases were found to comply with statutory requirements. The drain of one bakehouse was found on examination to be defective, and to need alteration and amendment. The owner of these premises had the drain repaired, and manhole, interceptor, and flushing apparatus provided.

FACTORY ACT.

Fifteen laundries and twenty-seven workshops were visited. There were found to be many alterations, some having been discontinued, whilst others were carried on at a different house, and again, new ones had sprung up where previously none

existed. This entailed measuring and recording the cubic capacity of several rooms. There were found to be very few "outworkers."

A curious incident occurred at a workroom in this district. A very bad smell being noticed in a cupboard of a ground-floor workroom, the matter was accordingly reported to this department. I visited the house, and expressed the opinion that the smell was not that of a drain but of coal gas. The meter and gas fittings were tested by the Gas Department, and were pronounced to be satisfactory. A few days after this an explosion occurred in this workroom early in the morning, after the doors had been closed overnight. Attention was then directed to the gas main in the road, with the result that about thirty yards away a considerable escape was found, which travelled under the ground and entered the workroom with such serious result.

I am, Mr. Mayor and Gentlemen,

Yours obediently,

H. RUSSELL SMITH,

*Cert. Royal San. Inst., San. Inspector,
and Inspector of New Buildings, Workshops, &c.*





BOROUGH OF TORQUAY.



Meteorological Report

FOR THE YEAR, 1905.

FREDK. MARCH, F.R. Met. Soc., M.P.S.,

Borough Meteorologist.

The Borough Observatory,

February 1st, 1906.

METEOROLOGICAL REPORT.

*To the Worshipful the Mayor, Aldermen and Councillors
of the Borough of Torquay.*

GENTLEMEN,

It is with pleasure I report that in the department under my control a step has been taken during the past year which is, in my judgment, of far reaching benefit to the Borough. I refer to the daily despatch since June of a weather telegram to the Meteorological Office. Until this was sanctioned, I was constantly being asked why no report of our weather appeared in this, that, or the other journal. These complaints are now much rarer, because the information that is wired to the Meteorological Office is made use of by Press agencies and circulated in all corners of the kingdom.

Beyond this, the regular services of daily, weekly, and monthly reports have been maintained, the charts of the morning readings have been duly posted in the town and in the windows of the weather office. The evening observations have been forwarded direct to the following papers:—"Liverpool Post," "Manchester Guardian," "Newcastle Chronicle," "Bristol Mercury," "Sheffield Independent," "Leeds Mercury," "Birmingham Post," "Western Morning News," "Western Daily Mercury," London "Leader," "Bradford and Yorkshire Observer," and through agencies to the London "Standard," "Daily Chronicle," "Daily News," and "Sheffield Telegraph."

Copies of the same observations have been sent by post each night to twenty-four stations and receiving offices on the Great Western Railway, and exhibited the following morning, through the continued courtesy of the company.

The Daily Weather Report of the Meteorological Observatory has been exhibited outside 34 Fleet Street, and has been valued by many visitors.

Weekly Reports have been sent for publication to the "Torquay Directory" and to the Exeter "Express." A weekly report of bright sunshine has been forwarded to the Meteorological Office.

The Monthly Report, as presented to the Council, has been published in the "Torquay Directory" and in the "Western Morning News" and "Western Daily Mercury," and has been posted in the town.

Reports have also been made monthly to the Royal Meteorological Society and to the British Rainfall Organization.

Many interesting enquiries concerning the climate of Torquay have been made verbally and by post. Full replies have always been furnished, and this has led in some cases to the free advertising of Torquay in journals of wide and influential circulation.

I am, gentlemen,

Your obedient servant,

FREDERICK MARCH.

OBSERVATORY AND INSTRUMENTS.

The Observatory is organised and maintained by the Town Council, and is under the supervision of the Royal Meteorological Society and of the Meteorological Office.

The several Barometers, Thermometers, and Rain Gauges have been verified at Kew Observatory, and regularly examined by a representative from the Royal Meteorological Society. Readings are all corrected for instrumental errors.

The Hygrometrical Results are deduced from the daily morning readings of the Dry and Wet Bulb Thermometers by means of Glaisher's Tables.

The averages for Sunshine are the result of 17 years', for Temperature and Rainfall of 28 years', and for Pressure of 21 years' observations.

The following are the instruments and appliances in regular use, those marked with an asterisk being the property of the Torquay Natural History Society, and lent by them to the town:—

* The **Barometer** is a Fortin Standard, and is read twice daily, at 9 a.m. (local time) and at about 5 p.m. All readings are reduced to 32° F. and mean sea level, and are thus comparable with all readings similarly reduced.

* An **Aneroidograph**, by Richard Freres, gives in graphic manner the alternations of pressure.

There are two double louvred **Stevenson's Screens**, each containing **Dry and Wet Bulb**, and **Maximum and Minimum Thermometers**. The instruments are of Casella's make, and are so placed that the bulbs of the hygrometer are four feet above the level of the grass. One of these sets has been working throughout the year at Cary Green, where the published *temperatures* have been taken; the other in the *Princess Gardens*.

A third ***Stevenson's Screen**, also double louvred, has been in position in the Princess Gardens, and has held a ***Thermograph**, or Self-recording Thermometer, and an **Ozonometer**.

***Solar Radiation Thermometers**, black bulb in vacuo and bright bulb in vacuo, are contained in a stand of their own, placed in the Princess Gardens.

The **Grass Minimum** is by Hicks, and is placed on grass in the Princess Gardens about an inch above the ground.

The **Rain Gauges** are of copper, by Casella, and of Snowden pattern. They are placed, one on Cary Green, one in the Princess Gardens, with the upper edge 12 inches above the level of the ground.

The **Sunshine Recorders** are placed upon the covered shelter at the southern end of the Pier deck.

They are—

(1). A Curtis' Improved Campbell-Stokes instrument, fitted with a $3\frac{1}{2}$ -inch spherical lens of crown glass, and working on the principle of the burning-glass.

(2). A Twin Jordan Photographic Recorder, which works by the differentiation in colour effected by bright sunlight on specially prepared chemical paper.

DURATION OF BRIGHT SUNSHINE

In hours and tenths of an hour,

As recorded by the Campbell-Stokes' Standard Instrument.

1905.	Total Bright Sunshine.	Percentage Actual of Possible.	Difference from Average.	Greatest Amount in one day.	Date.	Percentage Actual of Possible.	Sunless Days.
	Hours.	%	Hours.	Hours.		%	
January ...	87·3	34	+ 25·9	7·5	29th	84	9
February ...	98·3	36	+ 17·9	9·0	14, 21, & 22	91	3
March	153·9	42	+ 15·6	10·5	19th	87	0
April	107·8	26	- 72·4	11·2	24th	79	5
May	288·3	61	+ 61·1	14·3	20th	91	1
June.....	167·2	34	- 64·0	14·8	24th	91	5
July.....	238·9	49	+ 3·0	14·8	7th	92	0
August.....	193·7	44	- 13·6	12·8	14th	89	2
September..	153·2	41	- 11·3	10·3	21st	85	2
October ...	133·0	41	+ 20·4	9·1	22nd	89	3
November..	103·3	39	+ 36·0	8·2	2nd	86	4
December ..	49·9	21	- 3·4	7·3	11th	94	16
Year....	1774·8	40	+ 15·2	14·8	June 24th July 7th	91 92	50

REMARKS.

The total sunshine for the year amounted to 1,775 hours, being 15 hours above the average of 17 years, and 39 hours above the total of 1904. We were particularly fortunate in the distribution of the sunshine. The winter total was 626 hours—December alone shewing a deficit, and that a small one—giving an average of $3\frac{1}{2}$ hours per day. In an article in the "Lancet" of February 11th, 1905, entitled "January at Home and Abroad," Torquay and Jersey were expressly mentioned as being "particularly bright." Our advantage in the matter of winter sunshine is brought out in the following table, compiled from the official records of the Meteorological Office, and giving the totals of the first three months of 1905. The towns selected are the best known in their various districts:—

	January.	February.	March.	Total.
TORQUAY	87.5	98.3	154.0	339.8
St. Leonard's (S.)	93.6	89.3	139.0	321.9
Cambridge (E.)	83.4	87.1	138.2	308.7
Brighton (S.)	72.7	85.4	150.5	308.6
Margate (S.)	71.3	85.6	142.2	299.1
Bath (S.W.)	68.4	75.0	125.9	269.3
Nottingham (Mid.)	54.7	59.9	128.2	242.8
Sheffield (Mid.)	54.7	57.7	123.6	236.0
Birmingham (Mid.)	57.6	43.4	106.2	207.2
London (Brixton) (S.)	42.8	62.5	96.5	201.8
York (N.E.)	38.4	56.5	103.9	198.8
Manchester (N.W.)	9.5	30.2	76.1	115.8

The summer sunshine amounted to 1,149 hours, an average of 6.3 hours per day. The April and June totals were much below the average, but May, with 288 hours, was the sunniest month of the year.

The following table gives the comparative sunshine returns for the year 1904, the last figures available:—

BRIGHT SUNSHINE, 1904.

COMPARISON WITH OTHER TOWNS AND HEALTH RESORTS.

From the Yearly report of J. BAKENDELL, Esq., F.R. Met. Soc., the Fernley Observatory, Southport.

HEALTH RESORTS.	Hours.		Hours.
TORQUAY	1735.7	Bath	1427.7
Southport	1473.5	Folkestone	1800.4
Scarborough.. .. .	1416.1	Brighton	1713.2
Harrogate	1371.4	Eastbourne	1761.6
Blackpool	1539.1	Bournemouth	not given
Buxton	1323.8	Newquay	1574.3
Margate	1633.1	Jersey	1867.7
St. Leonard's	1796.3		
CITIES.			
LONDON	1327.6	Nottingham.. .. .	1386.6
Manchester	1014.1	Newcastle	1098.1
Sheffield	1324.7	Hull	875.1
Birmingham.. .. .	1231.0	Bolton	951.3

SHADE TEMPERATURES.

Taken at 9 a.m. (Local Time).

1905.	Maximum mean.	Minimum mean.	Max. & Min. mean.	Difference from Average.	Range mean.	Highest.	Date.	Lowest.	Date.
Jan. ...	48·0	37·6	42·8	+0·5	10·4	54·8	7th	29·4	27th
Feb. ...	49·7	40·2	45·0	+1·9	9·5	56·8	14th	32·0	25th
March.	52·3	40·4	46·4	+2·3	11·9	58·5	18th	31·5	15th
April ..	53·6	43·8	48·7	+0·5	9·8	59·3	11th	36·9	23rd
May ...	60·2	45·8	53·0	-0·1	14·4	68·8	17th	37·9	4th
June.	63·3	53·5	58·4	-0·3	9·8	75·9	25th	46·9	9th
July ...	70·9	57·2	64·1	+2·4	13·7	78·7	26th	50·7	7th
Aug....	65·7	54·8	60·3	-1·3	10·9	69·8	14th	50·2	14th
Sept. ...	62·9	51·3	57·1	-1·2	11·6	72·4	3rd	43·1	22nd
Oct. ...	55·4	43·1	49·3	-2·7	12·3	63·1	10th	31·9	17th
Nov....	50·4	38·8	44·6	-2·8	11·6	55·7	4th	25·8	21st
Dec. ...	48·9	41·2	45·1	+1·5	7·6	54·5	1st	33·8	12th
Year	56·8	45·6	51·2	—	11·1	78·7	July 26th	25·8	Nov. 21st

REMARKS.

With a rainfall in January and February 4 inches below the average, no snow being gauged at all ; with a total of bright sunshine 44 hours above the average, and a mean temperature in January of 43° (mean maximum 48° , mean daily range 10°), in February of 45° (mean maximum 50° , mean daily range 9.5°), and in March of 46° (mean maximum 52° , mean daily range 12°), Torquay was, perhaps, during these spring months, from a climatic point of view, the most desirable spot in Europe. That this may not be thought the indiscriminating praise of an enthusiast, there are appended portions of an article from the "Lancet" of February 11th, 1905. The figures relating to Torquay were supplied by the present writer, and the interpolated notes in brackets are his, but the comparisons are those of an impartial critic.

JANUARY AT HOME AND ABROAD.

The month of January must have been a great disappointment and a source of great discomfort to all except the most robust, who travelled south to escape the rigours of the coldest period of the year. Without going so far as to say that the cold and rough weather of January was unprecedented in the south of Europe, it can safely be affirmed that it was the most severe during the present generation. Nor was the cold confined to any particular locality, but while all the more sheltered spots naturally suffered the least none of the winter resorts escaped a temperature far below the normal, besides experiencing unpleasant falls of cold rain, sleet, and snow, and a sky usually very cloudy or quite overcast. In studying the appended table it is seen that Nice and Biarritz each had a lower minimum temperature, recorded by the screened thermometer early in the month, than our own inland places of Bath, Nottingham, and London [Bath 19° , Nottingham 19° , London 23° , Torquay 29°], while that at Florence was only one degree higher than at Bath and Nottingham, and that at Rome just equal to London, St. James's Park. Even at Naples and Palermo there were several degrees of frost [Naples 26° , Palermo 28° , Torquay 29°], while at Algiers and Lisbon the thermometer descended to within two degrees of the freezing point. At Naples frost was registered on seven nights, at Nice on ten, at Rome on twelve, and at Florence on as many as nineteen. In London there were only sixteen frosts, at Torquay two or three [two only— 31.1° on the 19th, and 29.4° on the 27th], and at Scilly none. The mean temperature for the month was highest at Algiers, Palermo, and Lisbon, but at all the other foreign resorts it was lower than at the Scilly Isles, Torquay, and Jersey ; at Florence it was three degrees lower than in London and two

degrees lower than at Nottingham, one of the coldest parts of England [and 7·5° lower than TORQUAY]. At almost all the foreign stations the means of the minima were inferior to those on our own south-west coasts [*e.g.*, TORQUAY 38°, Nice 34°, Biarritz 36°, Rome 34°, Naples 36°, Paris 27°]; at Florence the mean minimum was ten degrees lower than at Torquay and Jersey and 14 lower than at the Scilly Isles. The highest temperature of the month was recorded at Nice, and occurred immediately after the severe cold at the beginning of the year. The average day at Rome and Biarritz had the same degree of warmth (49 degrees) as the Scilly Isles, while that at Naples just equalled Torquay. With regard to equability [a very important consideration for invalids; mean daily range was at TORQUAY 10°, Nice 16°, Biarritz 13°, Florence 14°, Rome 13°, Naples 12°, Palermo 16°], none of the continental resorts can compare with Scilly, Jersey, and Torquay, and few of them were as equable as Nottingham. The precipitation from the clouds, composed largely of sleet or snow, was only excessive at Algiers; in this country it was, except at Jersey, much less than during an ordinary January. At all the British stations the number of hours of sunshine was far above the average, Torquay and Jersey being particularly bright.

Temperature and Rainfall.

Stations.	Highest temperature.	Lowest temperature.	Mean maximum.	Mean minimum.	Mean temperature.	Total rainfall in inches.	Number of hours sunshine.
	Degs.	Degs.	Degs.	Degs.	Degs.		
Nice	70	18	50	34	42·0	0·43	—
Biarritz	63	18	49	36	42·5	2·05	—
Florence	57	20	44	28	35·5	0·56	—
Rome	59	23	49	34	41·5	0·70	—
Naples	58	26	48	36	42·0	1·92	—
Palermo	60	28	55	39	47·0	2·18	—
Algiers	66	34	59	47	53·0	4·40	—
Lisbon	64	34	54	43	48·5	1·97	—
Paris	50	12	41	27	34·0	0·64	—
London	55	23	45	32	38·5	1·15	31·2
Scilly Isles	54	38	49	42	45·5	1·02	61·7
Jersey	54	25	47	38	42·5	2·04	95·3
Torquay	55	29	48	38	43·0	1·42	87·3
Bath	54	19	44	32	38·0	0·59	68·0
Nottingham	53	19	43	32	37·5	0·69	54·7

The summer months (June to September) were again relatively cool, with a mean maximum of 65·7, and a mean temperature of 60°. The hottest day was July 26th, 78·7°.

DURATION OF BRIGHT SUNSHINE

In hours and tenths of an hour,

As recorded by the Jordan Photographic Twin Instrument.

1905.	Total Bright Sunshine.	Difference from Camp- bell-Stokes' Record.	Greatest Amount in one day.	Date.	Sunless Days.
January	82.0	- 5.3	7.2	29th	8
February	96.2	- 2.1	8.8	14th & 21st	3
March	160.5	+ 6.6	10.5	19th	0
April ..	103.4	- 4.4	10.5	8th	4
May	277.3	- 11.0	13.8	20th	1
June.....	167.3	+ 0.1	14.4	24th	3
July	237.1	- 1.8	14.5	7th	0
August.....	200.6	+ 6.9	13.1	14th	2
September.....	159.2	+ 6.0	10.3	21st	1
October	133.2	+ 0.2	9.0	22nd	3
November	98.5	- 4.8	8.2	2nd	3
December	51.1	+ 1.2	7.1	11th	14
Year.....	1766.4	- 8.4	14.5	July 7th	42

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RAINFALL

In inches and hundredths.

1905.		Total Amount.	Difference from Average.	Wet Days.	Mean Wet Day Rainfall.	Greatest fall in 24 hours.	Date
January	*C. G.	1·42	— 1·91	10	0·14	0·82	16th
"	†P. P.	1·44					
February ...	C. G.	0·84	— 1·96	10	0·08	0·46	25th
"	P. P.	0·87					
March	C. G.	5·33	+ 2·76	19	0·28	1·42	10th
"	P. P.	5·27					
April	C. G.	2·65	+ 0·32	15	0·18	0·67	10th
"	P. P.	2·65					
May	C. G.	0·56	— 1·46	5	0·11	0·43	1st
"	P. P.	0·59					
June	C. G.	2·77	+ 0·60	17	0·16	0·61	16th
"	P. P.	2·82					
July	C. G.	0·59	— 1·89	5	0·12	0·20	27th
"	P. P.	0·64					
August	C. G.	3·16	+ 0·48	20	0·16	0·77	15th
"	P. P.	3·15					
September	C. G.	1·86	— 0·54	11	0·17	0·82	5th
"	P. P.	1·87					
October ...	C. G.	2·30	— 1·67	11	0·21	1·09	31st
"	P. P.	2·38					
November	C. G.	5·39	+ 1·74	16	0·34	0·88	12th
"	P. P.	5·23					
December	C. G.	1·01	— 2·85	9	0·11	0·24	27th
"	P. P.	1·04					
Year	C. G.	27·88	— 6·38	148	0·19	1·42	Mar. 10th
"	P. P.	27·95					

* Cary Green.

† Princess Pier.

REMARKS.

An excellent illustration of the uncertainty of the British climate, particularly in regard to downfall, is furnished by a comparison of the figures in this table with those of last year's Report. In January and February, 1904, about $11\frac{1}{2}$ inches of rain fell, this being about twice the ordinary amount, and there were 43 rain days; in January and February, 1905, the total was $2\frac{1}{4}$ inches only, or about 4 inches below the average with 20 rain days. In July, 1904, residents and tourists were treated to the liberal allowance of 4.62 inches, and rain fell every other day; in July, 1905, the total rain gauged $\frac{1}{2}$ inch, and fell on five days only. On the other hand, March and November, 1905, gave a total of nearly 12 inches, as against $4\frac{1}{2}$ inches in 1904, and 35 wet days as against 25.

In addition to the dry months specified above, there was a shortage of rain also in May, September, October, and December, so that the year closed with a deficit of 6.38 inches upon a total of 27.88 inches. Of the 29 years' rain records that we have upon our books, only six shew a lower total, the annual amounts varying from 24.13 inches in 1892, to 46.88 inches in 1891.

Technically there were 148 wet days in 1905, but, as a matter of fact, on no fewer than 57 of these the rainfall was trifling in amount, frequently the result of one morning shower at the beginning of a beautiful day.

The present writer feels each year more strongly the necessity for the revision of Meteorological language, so that a day upon which the rainfall is only the trifling amount of $\frac{1}{100}$ th of an inch, shall not be described to the public as a "wet" day, the term being altogether misleading. For rainfall purposes days should be classified under some such terms as "rain days," "wet days," and "very wet days."

BAROMETRIC PRESSURE

In inches and thousandths.

Reduced to 32° F. and Sea Level.

1905.	Mean of Month.	Difference from Mean of Month.	Highest Reading.	Lowest Reading.	Extreme Range of Pressure.
January	30·311	+0·268	31·035	29·311	1·724
February	30·248	+0·261	30·615	29·277	1·338
March	29·783	−0·172	30·319	29·052	1·267
April	29·860	−0·025	30·326	29·258	1·068
May	30·132	+0·161	30·451	29·438	1·013
June.....	29·956	−0·057	30·386	29·625	0·761
July	30·096	+0·143	30·273	29·850	0·423
August.....	29·914	−0·056	30·298	29·361	0·937
September	30·000	−0·019	30·349	29·581	0·768
October	30·090	+0·133	30·477	29·262	1·215
November	29·683	−0·288	30·185	28·940	1·245
December	30·235	+0·264	30·864	29·354	1·510
Year	30·026	+0·048	31·035	28·940	2·095

REMARKS.

The mean reading of the barometer for the year, as taken at 9 a.m., was 30.026 inches, being 0".036 above the mean of 1904, and 0".048 above the average of 21 years.

In every month except September high readings went with low rain totals, and low readings with high rain totals. In September the barometer was slightly below the average (0".019 inches), and the rainfall also below (0".54).

The highest official reading (31".035) was taken at 9 a.m. on the 28th January. This was abnormally high, the previous highest reading being 30".919 in 1902. The mercury rose still more during the day, attaining its highest level soon after midnight. By the aid of the barograph, an approximate reading was obtained of 31".075 (Sunday, January 29th, 12.15 a.m.)

The lowest reading was 29".354 on December 29th, giving an extreme range for the year of 2".095.

HUMIDITY, CLOUD, OZONE, AND WIND.

1905.	HUMIDITY.			CLOUD Cloud mean 1 to 10.	OZONE. Per centage of possible.			WIND. Prevailing Quarters.
	Dry Bulb mean.	Wet Bulb mean.	Relative Humidity.		Mean Daily Amount.	Greatest Daily Amount.	Least Daily Amount.	
	°	°	%		%	%	%	
January	41·7	39·6	83	6·0	46	90	20	N., N.W., & W
February	44·4	41·8	82	5·0	52	90	10	W. & N.W.
March ...	47·5	44·9	81	6·0	58	75	30	W. & S.W.
April ...	49·5	46·3	78	8·0	60	90	35	S.W. & W.
May	54·4	49·1	68	3·5	56	90	40	E., N.E., & W.
June.....	59·0	55·1	76	7·5	52	80	20	E. & W.
July	65·7	60·2	70	6·5	34	60	10	E., S.E., & S.W
August...	61·5	55·9	69	6·0	47	70	20	W. & S.
Sept. ...	57·9	54·1	77	6·0	44	70	20	N.W. & N.E.
October	48·8	45·7	78	5·0	40	70	10	N.W.
Nov.....	42·9	41·2	86	6·0	42	80	10	N.W.
Dec.	44·8	43·1	88	8·0	38	65	10	S.E. & S.W.
Year...	51·5	48·1	78	6·0	47	70	10	W. & N.W.

REMARKS.

Cloud is estimated according to a scale 0—10, 0 being clear blue sky and 10 a sky entirely overcast. The mean amount at the time of taking the daily observation, 9 a.m., was 6, varying from an average of 3·5 in May, to an average of 8 in April and December.

The mode of observing ozone is “to expose slips of white absorbent paper, soaked in a solution of iodide of potassium and starch for a definite period, in a cage allowing free access of air, while excluding direct sunlight and rain, and to note according to a definite scale the degree of discolouration the paper exhibits.”

The prevailing winds for the year were W. & N.W. In the winter months, particularly, westerly winds predominated, and not until May was there any large proportion of easterly breezes.

The mean humidity for the year was again 78, varying from 69 in August, to 88 in December. This figure denotes the percentage of possible moisture in the air (100=complete saturation), and it should be noted that the air of Torquay is relatively dry and not humid. This is shewn by the following schedule :—

MEAN HUMIDITY TABLE.

(From Mr. Bazendell's Report, 1903, to the Southport Corporation).

			%				%
TORQUAY	..	..	78	Bath	..	..	78
Southport	..	..	82	Ilfracombe..	..	..	80
Douglas	..	..	89	Tunbridge Wells..	..	..	81
Llandudno	..	..	78	Bude..	..	..	85
Buxton	..	..	82	St. Leonard's	..	..	82
Cheltenham	..	..	82	Brighton	..	..	83
Margate	..	..	82	Eastbourne	..	..	82
Scilly	..	..	83	Bournemouth	..	..	79
Guernsey	..	..	85	Newquay	..	..	86
Falmouth	..	..	84	LONDON (Greenwich)	..	..	80

SOLAR AND TERRESTRIAL RADIATION.

1905.	SOLAR.			ON GRASS.				Number of Days at 32° and below.
	Max. Mean	Highest.	Date.	Max. Solar Radiation.	Minimum mean.	Lowest.	Date.	
Jan.	70·4	90·8	28th	22·4	32·4	22·7	19th	15
Feb.	82·0	98·7	16th	32·3	35·7	25·8	12th	9
March....	95·1	111·5	29th	42·8	37·1	26·2	4th	5
April	92·2	108·3	1st	42·7	41·1	30·8	6th	1
May	96·9	107·2	29th	42·5	41·5	32·1	4th	0
June.....	96·7	113·5	26th	33·4	51·3	43·5	9th	0
July	105·3	113·8	13th	34·4	55·1	46·8	7th	0
Aug.	104·1	117·6	7th	38·4	52·4	46·3	2nd	0
Sept.	104·0	116·4	12th	41·1	47·9	39·5	26th	0
Oct.	90·3	109·1	4th	34·9	37·6	24·7	25th	8
Nov.....	78·2	97·4	5th	27·8	30·0	19·9	20th	19
Dec.	64·4	86·3	1st	15·5	33·8	23·7	10th	12
Year	90·0	117·6	Aug. 7th	33·2	41·3	19·9	Nov. 20th	69

METEOROLOGICAL ABSTRACT,

1905.

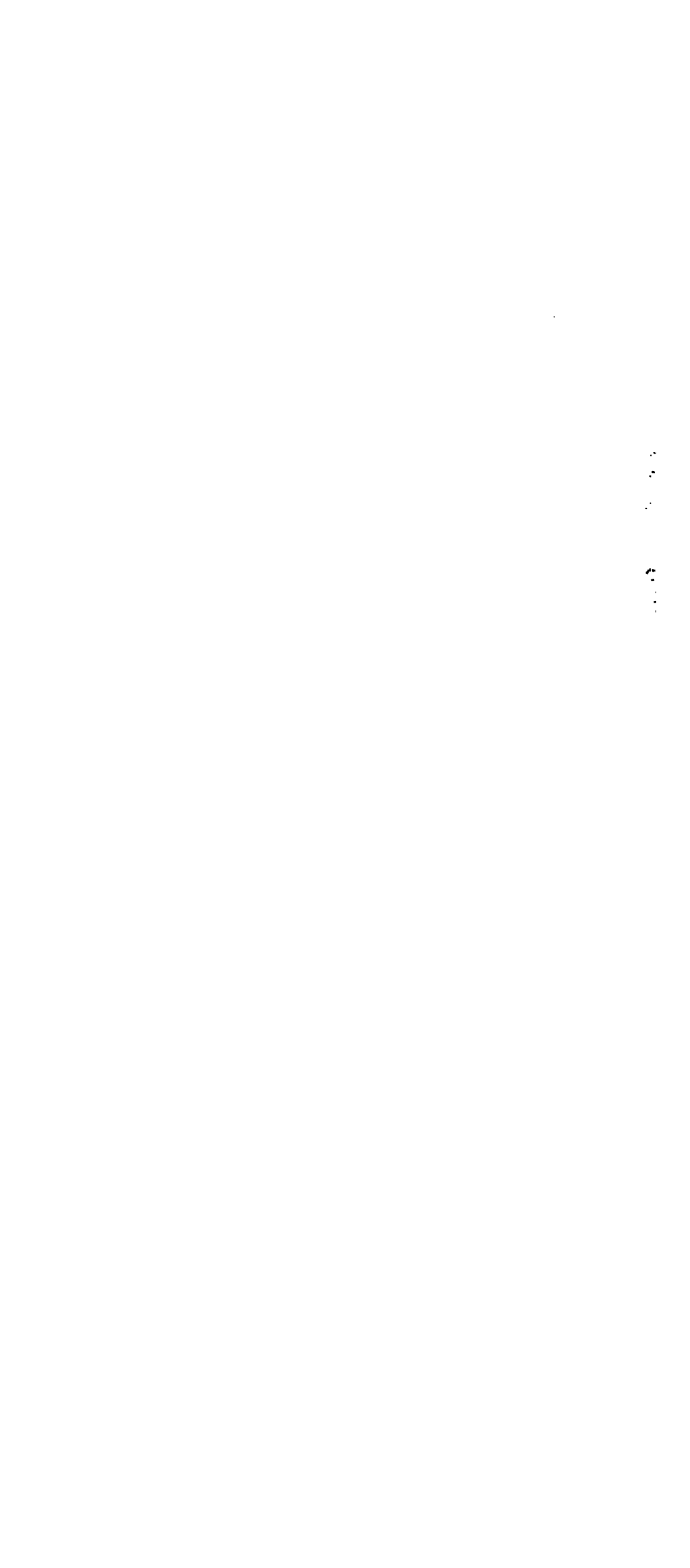
Highest Shade Temperature	-	-	78°·7
Lowest Shade Temperature	-	-	25°·8
Mean Maximum Temperature	-	-	56°·8
Mean Minimum Temperature	-	-	45°·6
Mean Temperature	-	-	51°·2
Mean Range of Temperature	-	-	11°·1
Total Rainfall	-	-	27"·88
Hours of Bright Sunshine	-	-	1774·8
Sunny Days	-	-	315
Mean Humidity	-	-	78
Mean Ozone	-	-	47







[REDACTED]



BOROUGH OF TORQUAY



Annual Report

OF THE

MEDICAL OFFICER OF HEALTH

FOR THE YEAR 1900.

BY

THOMAS EDVARD JAMES, M.D., D.P.H.

PHYSICIAN TO THE BOROUGH.

Annual Reports of the Sanitary Inspectors

AND THE

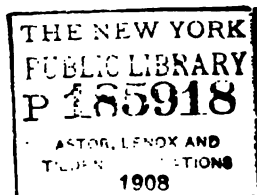
Report of the Borough Nomenclologist.



BOROUGH OF TORQUAY.



Annual Report
OF THE
MEDICAL OFFICER OF HEALTH
FOR THE YEAR 1906,
BY
THOMAS DUNLOP. M.B., C.M., D.P.H.,
TOGETHER WITH THE
Annual Reports of the Sanitary Inspectors
AND THE
Report of the Borough Meteorologist.



BOROUGH OF TORQUAY, 1906.

Area of the Borough, 3,858 acres.

Rateable value, £187,000.

Population—Census (1901), 33,625 ; estimated at the middle of 1906, 33,950.

Number of inhabited houses—Census (1901), 6,614.

Average number of persons per house, 5.

Density of population, 8·7 persons per acre.

Crude death rate, 1906, 13·9 per 1,000. Average for previous 10 years, 15·1 per 1,000.

Corrected death rate, 1906, 14·6 per 1,000. Average for previous 10 years, 14·1 per 1,000.

Death rate if all visitors excluded, 13·5 per 1,000.

Birth rate, 16·6 per 1,000. Average for previous 10 years, 17·0 per 1,000.

Infantile mortality, 1906, 107. Average for previous 10 years, 130.

Death rate from zymotic diseases, 5·3 per 1,000.

Mean annual temperature, 51·6.

Hours of Bright Sunshine Recorded, 2026·3.

Total Rainfall, 28·53 inches.



BOROUGH OF TORQUAY.

ANNUAL REPORT

OF THE

Medical Officer of Health

For 1906.

*to His Worship the Mayor, and to the Aldermen and Councillors
of the Borough of Torquay.*

GENTLEMEN,

I beg to present my fourth Annual Report on the health of the inhabitants, and the sanitary circumstances of the Borough of Torquay. The report also contains details of the administration of the Factory and Workshops Act as required by the Secretary of State for the Home Department.

The gross death-rate—13·9—is exactly the same as it has been for the past two years. I have much pleasure in reporting an increase in the birth-rate which is 16·6 per 1,000, against 15·4 last year, and 15·7 in 1904. It is the highest rate recorded since 1900. The Infantile Mortality is 107 per 1,000 births, in 1905 it equalled 101. The zymotic death-rate is 53 per 1,000, against 94 in 1905.

During the year the Model Bye-laws of the Local Government Board for dealing with tents, vans, sheds, and similar structures, used for human habitation have been adopted by your Council. Similarly, "Regulations for dealing with cases of infectious disease on board vessels" arriving at this port have been agreed to, and sanctioned by the Local Government Board.

The voluntary notification of Phthisis is now in force in the Borough. I hope that before long the Local Government Board will see their way to include this among those infectious diseases which are compulsory notifiable.

I would draw your attention to the resume in the report dealing with the second interim report of the Royal Commission on Tuberculosis, which will be found under the heading dealing with the milk supply, page 34.

As Medical Officer of the Education Authority, a large amount of useful work has been accomplished. A preliminary examination of the eyesight of all the children attending the elementary schools was made by the head teachers, and now it has been decided that those found to be defective shall be further examined by Dr. McKenzie, who has been appointed oculist to the Authority.

With the assistance of the teachers, I made a physical examination of all those children over five whose parents were willing for it to be done. I have not had time to tabulate the results obtained.

I have to thank the Members of the Sanitary Committee and of the Town Council for their kindness and support throughout the year, also the Chief Officers of the Borough, and the Members of the Sanitary staff for their ever ready assistance.

I am, Gentlemen,

Your obedient servant,

THOMAS DUNLOP.

THE BOROUGH.

The Borough of Torquay is formed by the civil parishes of St. Mary-Church and Tormoham. The total area of the Borough is 3,858 acres. It is divided into nine wards, which, with their populations, according to the 1901 census, are as follows :—

Torre	...	...	...	3851
Waldon	...	...	...	3576
Upton	...	...	...	4339
Ellacombe	...	...	...	5911
Strand	...	...	...	3129
Torwood	...	...	...	3644
St. Mary-Church	...	...	...	3312
Babbacombe	...	...	...	3264
Chelston	...	...	...	2599
The Borough	...	...	...	33,625

For the purpose of Sanitary administration, the Borough is divided into three districts, in each of which a Sanitary Inspector has full charge, under the Medical Officer of Health.

No. 1 District.—The whole of the Chelston, Torre, and Waldon Wards, that portion of the Strand Ward on the west side of Fleet Street, and that portion of Upton Ward on the west side of Union Street.

No. 2 District.—The whole of the Torwood Ward, that portion of the Strand Ward on the east side of Fleet Street, the whole of Ellacombe Ward, and that portion of the Upton Ward on the east side of Union Street.

No. 3 District.—The whole of the St. Mary-Church and Babbacombe Wards.

The principal public Institutions from a Sanitary point of view are—

The Torbay Hospital in the Upton Ward.

The Western Hospital for Consumptives, and the Rosehill Children's Hospital in the Strand Ward.

Smyrna, or the Mildmay Consumptive Home, in the Ellacombe Ward.

St. Barnabas', St. Luke's, St. Raphael's, and Erith House, all Consumptive Homes, situated in the Torwood Ward.

The Borough Sanatorium for infectious diseases is situated on the Newton Abbot Road, just outside the Borough boundary, in the Newton Abbot Rural District. The Corporation possess another Isolation Hospital, also situated outside the boundary, about half a mile from the village of Cockington.

PHYSICAL FEATURES AND GENERAL CHARACTER OF THE DISTRICT.

These are of a highly diversified character, especially the central portions forming the Torquay promontory. In this district the two principal heights are the Warberry, 448 feet, and the Lincombe Hills, 372 feet, forming long ridges running N.E. and S.W., which are composed of the Lower Devonian grits and slates. The lesser heights, such as the Braddons, Waldon Park, and Chapel Hill, are formed of Middle Devonian limestone, which rests above the grits and slates mentioned.

On each side of this central area, viz., at St. Mary-Church and Chelston, rocks higher in the Geological scale for the most part prevail. These rocks belong to the Permian formation, and consist of beds of Breccia—a kind of conglomerate—and sandstones of a deep red colour, owing to the presence of peroxide of iron.

There is very little clay in any portion of the area, and what does occur is of the nature of marl, and is confined to the lower levels of certain valleys or depressions, so that rain is not detained on the surface, as it rapidly disappears through these rather pervious rocks and soils.

METEOROLOGY.

Full details of the Meteorology of the Borough will be seen in the appended annual report of Mr. F. March, F.R. Met. Soc., M.P.S., Borough Meteorologist; but the following resumé of the climatic conditions may be of interest:—

	1905.	1906.
Highest Maximum Temperature ...	78°·7	76°·1
Lowest Minimum " ...	25°·8	28°·8
Mean Maximum " ...	56°·8	57°·3
Mean Minimum " ...	45°·6	45°·9
Mean of Maximum and Minimum ...	51°·2	51°·6
Difference from average ...	—	·4
No. of days on which rain fell ...	148	170
Total fall in inches ...	27·88	28·53
No. of hours of bright sunshine ...	1774·8	2026·3

THE CLIMATE OF TORQUAY.

The winter climate of Torquay may be described as mild and equable. By comparative tables of recorded temperatures, "The Lancet" has again and again demonstrated that although the mean temperature of Foreign Health Resorts, such as Nice and Florence, is somewhat higher than that of Torquay, yet the nights here are just as warm as those in the resorts mentioned. The main feature, however, is the large amount of sunshine experienced during the winter months. Other beneficial factors are freeness from fogs and the dryness of the air.

The benefit of living under such climatic conditions must be apparent to all, but it is inestimable to those who are asthmatical, or who are sufferers from chronic bronchitis. To the aged and infirm, who are extremely sensitive to every change of temperature, life under such conditions is prolonged and made worth living. The bright sunshine and the possibility of being constantly in the open air are most advantageous to children, and those who are delicate have every chance of growing up strong and healthy.

It hardly appears necessary to again refute the fiction that Torquay is unbearably hot in summer. During the hottest days it has been found invariably that the maximum temperature here is some 5 to 10 degrees lower than those recorded in London and the Midlands. To a great extent this is due to the fact that Torquay is situated on a promontory, thus being flanked on two sides by the sea, while to the north-west is Dartmoor, so that it is constantly fanned by cool breezes from one or other direction. It seems difficult to imagine a more delightful spot to spend a holiday in. Boating, bathing, and fishing of the best, while in the neighbourhood are innumerable places of beauty and interest, which are easily accessible by sea, coach, or rail. These facts are amply proved by the constantly increasing number of visitors, who year after year spend their summer holidays here.

WATER SUPPLY.

The water supply of Torquay is derived from an upland surface gathering ground about 15 miles from Torquay, on the borders of Dartmoor. The area of the gathering ground is about 2,241 acres, and is composed of:—

			Acres.
Moorland	...	...	584
Woods...	...	...	75
Woods (new)	...	...	30
Land within zone	...	...	350
Land under cultivation	...	...	212
Grazing	...	...	990
Total			2241

At the present time the water is stored in two large reservoirs—the Tottiford Reservoir containing 103,000,000 gallons, and the Kennick Reservoir 194,000,000 gallons.

The supply is augmented by taking water from the Trenchford stream, the yearly average amount being 170,000,000 gallons. In order to reduce to a minimum the possibility of there being any shortage of water in very dry seasons, the Corporation applied for and obtained an Act of Parliament, enabling them to build another reservoir in the Trenchford Valley, impounding the waters of the Trenchford stream. This reservoir will be capable of containing 200,000,000 gallons.

The work of constructing the dam was commenced in February, 1904, and has continued satisfactorily since then. At the present time almost the whole of the clay core has been put in position, and the pitching of the water face is rapidly approaching completion. The valve tower has been placed in position, and practically all that now remains to be done is to clear up the bed of the reservoir.

In the Parliamentary Session of 1896-7 the Corporation obtained power to purchase the whole watershed. This they did, and were enabled to remove all farms and inhabited buildings from the area, thus doing away with a constant menace to the purity of the water. The reservoirs and all streams and feeders have also been surrounded by zone fences with trenches inside; the latter being intended to catch the surface water, and cause it to percolate through the ground before reaching the streams. The improved quality of the water fully justifies the Corporation in the large expenditure incurred, and has reduced the possibility of pollution to a minimum.

Much labour has during the year been expended in cleaning up and clearing the streams, and in endeavouring to prevent the passage of peaty matters into the reservoirs.

The rainfall on the watershed is taken at five stations, and the results were as follows :—

		1905.	1906.
Kennick ...	...	33·79 inches.	34·84 inches.
Mardon ...	...	33·70 "	35·28 "
Blackingstone ...	...	21·32 "	28·01 "
Laployd ...	...	25·12 "	29·51 "
Bullaton ...	...	—	39·03 "

Average over whole watershed 32·94 inches, or four and a half inches more than in 1905, when it was 28·46 inches. The average amount of evaporation was 21·64 inches over a water area of about 83 acres.

The water supply is continuous, and the average amount used for all purposes was 32·9 gallons per head per day, against 32·75 gallons in 1905.

Professor Percy Franklin, after visiting the gathering and examining samples of the water, both chemically and bacteriologically, reported as follows :—

“A source of water supply which, in respect of freedom from suspicion, ranks with the best upland surface supplies in the Kingdom. The water also contains such a small amount of lime and magnesia salts that it possesses all the well-known advantages of very soft water, whilst its slightly alkaline reaction prevents it from having any solvent power on lead.”

During the year I have made regular chemical analyses of the water taken from different parts of the borough, and also of samples taken from the springs and streams feeding the reservoirs. The following results of a recent analysis are typical :—

PHYSICAL CHARACTERS.

Colour ...	...	Slight brownish yellow.
Turbidity ...	...	Cloudy.
Odour ...	...	None.
Deposit ...	...	A very minute amount of vegetable debris.

CHEMICAL RESULTS.

Expressed in parts per 100,000.

Total solids ...	...	...	...	7·6
Chloride ...	...	...	...	1·5
Hardness ...	...	...	...	2·4
Nitrites ...	...	...	...	Nil
Nitrates ...	...	...	...	·19
Free Ammonia ...	...	...	...	·0026
Organic Ammonia ...	...	...	...	·0048
Oxygen absorbed in 4 hours at 80° F. ...	...	...	...	·056
Poisonous metals ...	...	...	...	Nil

From an examination of the above results and a knowledge of the gathering ground, I have no hesitation in classifying this water as an excellent one for all domestic purposes.

SEWERAGE.

The sewage of the whole district, and most of the storm-water, is conveyed to the main sewer in Fleet Street. That of the low-level system, which comprises the area covered by the Strand, Torbay Road, Vaughan Parade, Victoria Parade, Beacon Hill, George Street, and Swan Street, being pumped into the main sewer by means of automatic hydraulic pumps. The main sewer

is 7 feet in diameter, and runs from Fleet Street to Hope's Nose, a distance of almost two miles. The outfall is at such a level that the sewage is discharged at all states of the tide. No method of treatment is adopted, as the flow of current is out towards mid-channel beyond Berry Head, and does not under any circumstances return towards the bay.

On one or two occasions the flooding of premises at Plainmoor, on the St. Mary-Church Road, mentioned in my last report, recurred during exceptionally heavy rain. The Borough Engineer has at two points, viz., at Forrest Road and at Mudges Hill, put in relief sewers, which ought to prevent any baying back of storm water in the main. Since this was completed no further complaints have been received.

The difficulty of draining the new houses in Rowley Road, off Fore Street, St. Mary-Church, has been overcome, by carrying a main sewer from there to the existing sewer in Petitor Road. The Cary Estate and the Town Council dividing the cost.

The work of erecting the new pumping station at Livermead is now nearing completion. The sewage from all existing houses and all future buildings will be taken there and pumped into a rising main, which discharges into the existing sewer at Seaway Lane. A separate system of sewers will be laid to carry all surface water into the stream which discharges into the sea at Livermead Beach.

COLLECTION AND DISPOSAL OF REFUSE.

House refuse is removed by the employees of the Corporation, under the Surveyor's Department. In most parts of the town it is removed once a week, but in certain parts twice. It is carted to the destructor works in Upton Valley, and there consumed, about 12,000 tons being dealt with annually. The destructor is a "Warner Perfectus" of four cells. The boilers are heated from the furnaces, and the steam generated can be used to drive donkey-engine, vertical engine for running blower, 25-horse power engine for running mortar mill and electrical installation. The clinker produced is ground and used for mortar: for this there is a good demand.

POPULATION.

The population of the Borough at the 1901 census was found to be 33,625, of whom 13,339 were males, and 20,286 females. The number of inhabited houses being, 6,614, and the average number of persons per house was 5.

It is somewhat difficult to arrive at a correct estimate of the population of the Borough. At the census in 1901 it was found that the population had been slightly overestimated. I have, therefore, been content to make my estimate by adding the natural increase, *i.e.*, the excess of births over deaths, to the population estimated for the previous year. This gives us a total of about 33,950, which has been used to calculate the various rates in this report.

The average number of persons per acre is 8·7.

It is necessary, in preparing statistics and comparing the various death rates of Torquay with those of the whole country, to consider the age and sex distribution of the population. The population of a district, in which the proportions of males to females, or of young persons to old persons, are different to those of the country generally, will suffer more than the whole country from the diseases which particularly affect persons of the age and sex which predominate in the district. In order to ensure a just comparison between the death-rate of such a district and the country as a whole, it is necessary to raise or lower the gross death-rate of the district to what they would be if the proportions of the local population in respect of age and sex were the same as those in the country generally.

As Torquay has a much larger proportion of females to males in its population, and of people at advanced ages, than that of England and Wales, I have calculated a factor by which all Torquay rates have to be multiplied to compare them with those of the whole country. This factor is '8044.

BIRTHS.

The total number of births registered during the year was 566—males 298, females 268—being 44 more than in 1905. Of the 566 births 25 were illegitimate, equal to 4·4 per cent.

The numbers registered in each quarter of the year were as follows :—

1st quarter	...	...	...	133
2nd „	...	...	...	160
3rd „	...	...	...	143
4th „	...	...	...	130
Total	...	...	...	566

The birth-rate is equal to 16·6 per 1000 per annum, or 1·2 per 1000 higher than in 1905. It is the highest rate since 1900. It is a great satisfaction to be able to record even this slight increase in the birth-rate, as it is usually considered to be the natural and direct result of prosperity.

The following table gives the total births and the birth-rates for the past seven years compared with those for England and Wales.

Years.	Number of Births.	Torquay Birth Rate, per 1,000 living.	England & Wales Birth Rate, per 1,000 living.
1900	559	16·6	23·9
1901	556	16·5	23·5
1902	540	16·0	23·6
1903	536	15·9	23·4
1904	530	15·7	27·9
1905	522	15·4	27·2
1906	566	16·6	27·0

Last autumn, at a meeting of the Sanitary Inspectors' Association held at Blackpool, Sir James Crichton-Browne gave the Presidential address, and incidentally drew attention to the rapid fall in the birth-rate of that Borough. He then enumerated a list of some 15 towns whose birth-rates were the same or below that of Blackpool, and lowest on this list was Torquay. He attributes the low birth-rate to the character of the population, saying that the towns mentioned "are the resort of affluent, intelligent, educated, well-to-do people, and have in their population a comparatively large proportion of that class."

At the last census it was found that the population of Torquay shewed an excess of 6947 females over males; that a very large proportion of the female population were spinsters, and that some 40 % were either above or below the child-bearing age. In the face of such facts as these, it is not reasonable to expect anything but a low birth-rate. It is manifestly unfair to compare the birth-rate of Torquay with such a town as Rhondda, unless the population is reduced to a normal standard of constitution as regards sex, age, and marriage. Indeed, for comparative purposes the birth-rate should be calculated, not on the population, but on the number of married women between the ages of 20 and 40, who constitute the great majority of active mothers.

VACCINATION.

Through the courtesy of Mr. Edwards, the Vaccination Officer, I am able to give the results of primary vaccination for the years from 1897 to 1905. It is very satisfactory to note the large percentage of children protected from this loathsome disease.

Year.	Total births registered	Successfully vaccinated	Insusceptible of Vaccination	Had Small-pox	Number of Certificates from Conscientious Objectors	Died Unvaccinated	Postponed by Medical Certificate	Removed to other districts the Vaccination Officer of which has been apprised	Removed Address unknown	Percentage successfully Vaccinated	Excluding those who died Unvaccinated, Percentage
1897	683	581	2	—	—	59	—	4	20	85%	93%
1898	664	544	2	—	10	64	6	7	25	82	90
1899	612	505	6	—	14	67	6	3	11	83	93
1900	596	502	1	—	15	47	7	3	21	84	91
1901	597	491	2	—	16	57	13	1	17	82	91
1902	579	488	2	—	8	61	4	4	8	84	92
1903	565	508	2	—	14	34	1	3	3	90	95
1904	564	476	—	—	20	49	3	6	8	84	92
1905	561	504	—	—	16	30	5	2	4	90	94

INFECTIOUS DISEASES.

Under the Torquay Harbour and District Act, 1886, provision was made for the compulsory notification of the dangerous infectious diseases. It also contained similar clauses to those in the Infectious Diseases Prevention Act, 1890, which rendered its adoption unnecessary.

NOTIFICATIONS.

During the year 49 cases of infectious disease were notified, 10 less than in 1905.

Table giving comparison with previous five years :—

Notifiable Disease.	1906	1905.	1904.	1903.	1902.
Small-pox	—	1	—	2	—
Cholera	—	—	—	—	—
Diphtheria	2	6	4	13	9
Membranous croup	—	—	—	—	—
Erysipelas	2	5	3	3	3
Scarlet fever ..	34	36	28	21	17
Typhus fever ..	—	—	—	—	—
Enteric fever ..	11	10	9	9	8
Relapsing fever ..	—	—	—	—	—
Continued fever ..	—	—	—	—	—
Puerperal fever ..	—	1	1	1	—
Plague	—	—	—	—	—
*Chicken Pox ..	—	—	—	5	33
Totals ..	49	59	45	54	70

*In 1903 Chicken Pox was notifiable for the first three months of the year, and in 1902 for the last nine months,

The following table gives the notifications during each month 1905 :—

	Small-pox.	Diphtheria and Membranous Croup.	Enteric Fever.	Puerperal Fever.	Scarlet Fever.	Erysipelas.	Chicken-pox	Total.
January ..	—	1	—	—	3	1	—	5
February ..	—	—	—	—	1	—	—	1
March ..	—	—	1	—	3	—	—	4
April ..	—	1	2	—	6	—	—	9
May ..	—	—	7	—	2	—	—	9
June ..	—	—	—	—	3	—	—	3
July ..	—	—	—	—	3	—	—	3
August ..	—	—	—	—	—	—	—	0
September ..	—	—	—	—	—	—	—	0
October ..	—	—	—	—	8	—	—	8
November ..	—	—	—	—	4	—	—	4
December ..	—	—	1	—	1	1	—	3
Totals ..	—	2	11	—	34	2	—	49

In table III. of the Local Government Board returns on page 43 full details are given of the age of patients, the number occurring in each ward, and the number of such removed to hospital.

CASES ISOLATED IN HOSPITAL.

Of the 49 cases, 32 were removed ; this is equal to 65 per cent. They were as follows :—

Scarlet Fever ... 29 cases to the Sanatorium, Newton Road.

Enteric Fever ... 3 „ to the Torbay Hospital.

STEPS TAKEN TO PREVENT THE SPREAD OF INFECTIOUS DISEASE.

On the receipt of a notification, the house is visited as soon possible, particulars as to source of infection, milk supply, school attended, drainage, etc., obtained, and if necessary arrangements

made for the removal of the patient to the Sanatorium. Frequently the Medical Attendant notifies that the case is one suitable for treatment in the Sanatorium, a step which greatly facilitates their early removal.

After removal, or on recovery, should the patient be isolated at home, the infected rooms and bedding are fumigated with formaline. Next day the bedding and clothing is removed to the Disinfecting Station, and there sterilised in a steam disinfector. In every case of notifiable disease this is done free.

The disinfector is one of the Thresh Disinfector Company's machines. It has now been in constant use for two years, without requiring any special attention. During the year 1435 articles have been disinfected. These include 170 mattresses, 70 bolsters, 239 pillows, 132 blankets, 55 sheets, the remainder being curtains, carpets, rugs, and various articles of clothing.

Where it is found that children in an infected house are attending one of the public elementary schools, the Attendance Officer is notified of the case. All cases suspected to be infectious by the School Attendance Officer, and where no doctor is in attendance, are notified to me as Medical Officer to the Education Authority.

MEANS OF ISOLATION.

The Borough Sanatorium, Newton Abbot Road, consists of the administrative Building—a Scarlet Fever ward block, consisting of two wards, with 7 beds in each; and a Diphtheria ward block, two wards, with 7 beds in each. There is also a private ward for one patient, with Nurse's room attached.

ENTERIC FEVER.

When there is accommodation, the Authorities of the Torbay Hospital admit cases of this disease.

COCKINGTON SANATORIUM.

Taken over from the Cockington Urban District at the time of the amalgamation. This hospital is considerably more than half-a-mile from any inhabited building, so that it is kept in readiness for the reception of small-pox, should any arise. Twice during the last four years has it proved its usefulness, as I have, by removing to it imported cases of small-pox without delay,

prevented the spread of the disease. In a health resort such as Torquay, where the introduction of small-pox is not unlikely, and the consequences of an epidemic would be disastrous, such accommodation is absolutely indispensable.

SMALL-POX.

I am glad to say that, although many cases occurred in surrounding towns, no introduction of this disease took place.

DIPHTHERIA.

Only two cases were notified, compared with six in 1905. Both children were well isolated at home, and both recovered. In the house where one of these cases occurred, the drains were found to be in a very defective condition.

SCARLET FEVER.

Thirty-four cases were notified against 36 in 1905. There were no deaths. From the table giving the monthly notifications it will be seen that cases occurred every month of the year except June, July, and August, the greatest number being in October, when eight cases arose, while six were notified in April.

Cases occurred in every ward except Babbacombe. Of the 34 cases notified, 29 were removed to the Sanatorium for treatment.

The sex and age distribution is as follows :—

	At all ages.	Under 1.	1—5	5—15	15—25	25—65	Over 65
Males	16	—	3	8	5	0	0
Females	18	—	3	9	1	5	0

ENTERIC FEVER.

Eleven cases were notified against ten in 1906. There were no deaths. Three were removed to the Torbay Hospital for treatment,

In April and May a localised outbreak occurred, nine cases being notified, these together with three others which, although notified in other districts, most probably were infected here, makes 12 in all. The annexed table of particulars makes it easier to understand the following deductions. All the cases except one occurred in one ward, and all, except this one, received their milk from a particular dairy in this ward, or had used the milk from there. In the case of the exception, there was a common source of supply from a farm outside the Borough. In the absence of any other factor common to all the cases, the above facts point almost exclusively to the milk from this dairy being the cause of the disease, and to the probability that one farm outside supplying the two implicated dairies was the source of infection. Although numerous visits of investigation were made both to the dairies and farms, no history of any suspicious illness either among the inmates or employes, or any other fact of importance, was obtained. One fact alone seems worth mentioning: Farm E occasionally received a small quantity of milk from Farm G, and at Farm G, although there is an excellent supply of water, an old pump was found in the yard the water of which was grossly polluted, drawing water from a well near a ditch which received sewage from the house; this well had been condemned. The farmer denied that it was ever used for anything except for washing down horses and carts. There is just a possibility that a can may have been fouled with this water, and although milk was sent from Farm A to other dairies in Torquay, no cases occurred among their customers.

Although there is strong presumptive evidence that milk was the cause of the outbreak, there are certain points against it which ought to be considered. I found that the dairyman whose milk was suspected supplied over 100 houses; estimating 5 persons per house, less than $2\frac{1}{2}$ per cent. were infected, which is low for an outbreak due to milk. If milk was the cause, the infective material must have been introduced in small amounts and on several occasions.

ENTERIC FEVER CASES.

Case.	Ward.	Age.	Date of Notification.	Probable date of onset.	Probable date of being infected.	Town Dairy.	Farm from which supply comes.	Bye sources of supply.
1	6	22	April 19th	April 5th	Mar. 15th—Mar. 22nd	A	E	G
						D		
2	6	20	April 21st	April 14th	Mar. 25th—April 1st	B	B	
						A	E	G
							D	
3	2	17	May 1st	April 24th	April 3rd—April 10th	B	B	
						C	E	G
							F	
4	6	10	May 5th	April 21st	Mar. 31st—April 7th	A	E	G
							D	
5	6	10	May 5th	April 24th	April 3rd—April 10th	A	E	G
							D	
6	6	—	—	—	—	A	E	G
							D	
7	6	33	May 5th	April 29th	April 7th—April 14th	A	E	G
							D	
8	6	18	May 7th	April 30th	April 9th—April 16th	A	E	G
							D	
9	6	8	May 18th	May 11th	April 20th—April 27th	A	E	G
							D	
10	6	17	May 18th	May 1st	April 10th—April 17th	A	E	G
							D	
11	6	56	May 21st	May 8th	April 17th—April 24th	A	E	G
							D	
12	6	45	May 23rd	May 4th	April 13th—April 20th	H	I	
							J	
							K	

Note 1.—Cases 4, 5, and 6 were not notified here, but particulars were furnished me by the Medical Attendants or relatives.

Note 2.—Case 12 was a charwoman, who, although she did not get milk from dairy A, worked in houses where this milk was used.

Note 3.—Dairies A and C both obtained milk from Farm E.

PUERPERAL FEVER.

No cases of this disease were notified.

The Non-Notifiable Infectious diseases, such as Measles, Mumps, Whooping-Cough, etc., will be dealt with under deaths from these causes.

BACTERIOLOGICAL DIAGNOSIS.

Owing to much valuable time being lost in obtaining the results of bacteriological examinations when specimens were sent to London, arrangements were made with Mr. Quant, of the South Devon Chemical and Bacteriological Laboratory, to undertake this work.

During the year 34 specimens were examined. Eighteen of swabs from throats suspected to be diphtheritic. In only one was the specific organism found.

Fifteen blood serum tests were made for diagnosis of enteric fever. Seven were positive, seven negative, while one was indefinite.

One specimen of meat was examined for the tubercle bacillus.

 SANATORIUM REPORT

For the year ending March 31st, 1906.

TO THE CHAIRMAN AND MEMBERS OF THE SANITARY
COMMITTEE.

GENTLEMEN,

At the close of the financial year 1904-1905 there were two patients under treatment in the Sanatorium, and from that date till March 31st, 1906, thirty-four fresh cases were admitted, making a total of thirty-six cases during the year.

The diseases treated were as follows :—

Scarlet Fever	...	27 cases.
Diphtheria	...	4 „
Suspected Diphtheria,	2 cases kept under observation.	
German Measles	...	2 cases.
Mumps	...	1 case.

All were discharged cured except those who were under treatment at the end of the year.

The patients were in hospital a total of 1,505 days, giving an average stay in hospital of 41 days for each patient.

The following table shows the cost of working for the twelve months :—

1906.	EXPENDITURE			£	s.	d.
Diet of Patients	...	...	...	108	7	2
Wages and Diet of Nurses	...	...	...	107	3	6
Laundress	...	...	...	55	12	0
Curator	...	...	...	65	0	0
Surveyor's Account	...	...	...	31	18	3
Tradesmen's Accounts	...	...	...	52	2	1
Rents, Rates, and Insurance	...	...	...	10	13	6
Drugs	...	...	...	5	1	1
Medical Fees	...	...	...	21	0	0
Conveyance of Patients	...	...	...	6	5	0
Coal, Coke, and Wood	...	...	...	33	15	10
Rent of Telephone	...	...	...	10	10	0
Painting	...	...	...	28	8	6
Disinfecting	...	...	...	5	16	8
				<u>£541</u>	<u>13</u>	<u>7</u>

For the treatment of three sailors from His Majesty's Fleet, the sum of £55 11s. was paid by the Admiralty, and £4 18s. by the Newton Board of Guardians for a parish patient.

The following table gives the cost of this and previous years :—

				£	s.	d.
1898.	30	Patients cost	...	493	13	2
1899.	35	" "	...	513	14	11
1900.	42	" "	...	564	2	10
1901.	26	" "	...	515	15	11
1902.	58	" "	...	903	6	6
1903.	26	" "	...	570	12	5
1904.	24	" "	...	484	11	1
1905.	27	" "	...	507	5	0
1906.	36	" "	...	541	13	7

THE COCKINGTON SANATORIUM.

During the year this hospital was opened for the reception of one case of Small-pox. The patient was admitted on August 9th and discharged cured on September 26th, so that he was under treatment a period of 48 days. To treat this one patient it was necessary to engage a special nurse, and a man and his wife, the latter to act as cook and the former as porter and messenger.

The cost of treating this case amounted to £45 12s. 3d. The total cost of maintenance of this hospital for the year is as follows :—

			£	s.	d.
Caretaker	...	...	2	15	0
Rent, Rates, and Taxes	...	..	48	18	3
Treatment of Small-pox Patient	...		45	12	3
			<u>£97</u>	<u>5</u>	<u>6</u>

Mr. and Mrs. Arnall and Nurse Hunt have carried out their duties to my entire satisfaction. I have heard nothing but praise from the patients for the treatment they have received.

I am, Gentlemen,

Your obedient servant,

THOMAS DUNLOP,

Medical Superintendent

Working of the Midwives Act, 1902.

The local administration of this Act is being carried out by a Sub-Committee of the Sanitary Committee.

There are seven midwives on the register who have notified their intention to practice in the Borough, the same number as in 1905. No cases of puerperal fever have occurred. Although no midwife has been reported for any breach of the rules, yet I have had to complain of several matters. In one instance, a midwife attending a case saw that the infant was not likely to survive, and neglected to send for a medical man. In one or two other cases where a doctor has been called in, no notice of this was sent to me. The excuse put forward in these cases was ignorance of the rules. I have also had to complain in two instances of the condition of the midwives' kit, bags allowed to get into a dirty and dilapidated condition, while various articles belonging to it were missing. Some of the midwives, unless constantly inspected and worried, quickly relapse into their old ways.

There appears to be some diversity of opinion as to what constitutes the duty of an Inspector under the Midwives Act. To

me, the mere inspection of the midwives' register and kit is of little value. It seems essential that the Inspector should question the midwife as to her methods and find out her difficulties, in fact, I consider that either a simple book of instruction should be provided, or that a course of lectures or talks should be given, and in this way endeavour to bring those midwives who have had no hospital training into line with those who have.

The question of remuneration of medical men called in by midwives, in cases of difficulty, is certainly one that should receive the immediate attention of Parliament, as there is little likelihood of those Authorities who administer the Act dealing with it in a satisfactory manner.

DEATHS.

During 1906 the number of deaths registered in the Borough was 475—males 218, females 257.

The gross death-rate is therefore equal to 13·9 per 1,000. If it was permissible to eliminate the deaths of 58 visitors, the rate would be equal to 13·5 per 1,000. To obtain the corrected death-rate, it is necessary to add the deaths of 43 persons occurring in Newton Abbot Workhouse who belong to Torquay, and subtract the deaths of 19 non-residents who died in the public institutions of this town. The total deaths would therefore be 499, and the corrected rate equal to 14·6 per 1,000 per annum.

The following table gives the Torquay death-rates for recent years, compared with those in England and Wales for corresponding years :—

Year.	Number of Deaths.	Death-rate.	Death-rate excluding deaths of Visitors.	Death-rate of England and Wales.
1901	476*	14·1	12·9	16·9
1902	491*	14·6	13·3	16·3
1903	448	13·3	11·5	15·4
1904	482	14·2	12·4	16·2
1905	491	14·5	12·6	15·2
1906	499	14·6	13·5	15·0

* No record kept of deaths in Newton Workhouse of Torquay residents.

If the death-rate of 14·6 be multiplied by the factor '8044 to correct it for sex and age distribution, and so make it strictly comparable with that for England and Wales, it would be equal to 11·7 per 1,000 per annum.

During the year there were 21 inquests held, while two deaths were uncertified.

DEATHS AT VARIOUS AGE PERIODS.

Of the total of 499 deaths—				Percentage of total deaths.	
51	were under 1 year of age	...	equals	12·2	
11	" 1 year and under 5 years	...	"	2·2	
5	" 5 years	15	"	1·0	
22	" 15 "	25	"	4·4	
166	" 25 "	65	"	33·2	
234	over 65 years	...	"	47·0	
Total 499 at all ages.				100·0	

The deaths in the various wards are given on Table II., on page 42.

It will be seen from the above table that close on 50 per cent. of the total deaths were those of persons aged 65 years and upwards. One death was recorded at the great age of 99 years.

INFANTILE MORTALITY.

There were 61 deaths of infants under one year, 8 more than in 1905. As there were 566 births registered, the infantile mortality is equal to 107 per 1,000 births. To some extent this favourable figure is due to the large number of births registered. The rate for England and Wales during 1906 was 133 per 1000 births.

The following table gives the causes of death among infants for the past five years :—

	1906.	1905.	1904.	1903.	1902.
Measles ...	0	5	1	0	1
Whooping Cough ...	1	3	1	3	7
Influenza ...	0	0	0	0	0
*Diarrhoea ...	16	7	11	6	6
Septic Diseases ...	0	0	0	1	0
Phthisis ...	0	0	0	0	1
Other Tubercular Diseases	0	1	0	1	4
Bronchitis ...	3	4	10	6	12
Pneumonia ...	4	5	2	1	4
Premature Birth ...	16	11	18	8	15
Heart Disease ...	0	0	0	2	0
Accidents ...	0	0	0	2	3
All other causes ...	21	17	21	25	37
Totals ...	61	53	64	55	91

* Includes the deaths of all children under one year whose deaths were registered as due to Enteritis.

Fuller particulars giving exact details as to cause of death and the age, stated in weeks and months, under one year, are given in Table V., page 45.

THE CAUSES OF DEATH.

The Local Government Board, Table IV., gives the causes and ages at death. *Vide* page 44.

DEATHS FROM ZYMOTIC DISEASES.

The Zymotic death-rate is calculated from the number of deaths due to the seven principal zymotic diseases. The following table gives them and the deaths recorded from each :—

Small-pox	...	...	0
Measles	...	...	0
Whooping-cough	...	...	1
Scarlet Fever	...	...	0
Diphtheria	...	...	0
Fevers	{ Typhus Enteric Continued }	...	0
Diarrhœa	...	...	17
Total	...	...	18

As stated, when dealing with the infantile mortality, the Local Government Board have this year given instructions that all deaths of children under 1 year registered as due to Enteritis are now to be included under Diarrhœa. This will raise the zymotic death-rate, but is a useful improvement, as it is bound to produce a certain amount of uniformity in the preparation of statistics which was absent before.

The Zymotic death-rate for the year is equal to '53 per 1,000, compared with '94 per 1,000 in 1903. The rate for England and Wales for 1906 was 1'73 per 1,000, so that the rate for Torquay may be considered as highly satisfactory.

SMALL-POX.

There were no cases, and consequently no deaths.

MEASLES.

After the heavy epidemic of this disease in 1905, I only heard of one or two cases, and it is probable the town will remain free for another two years. No deaths were registered.

WHOOPING COUGH.

A few cases of whooping cough were brought to my notice, but nothing resembling an epidemic occurred. One death from this disease was registered.

CHICKEN-POX.

Early in the year there were a number of cases of this disease affecting the attendance of children at St. John's School and Hele Infants' School.

MUMPS.

Mumps was continuously present in the Borough for the last six months of the year. It first broke out sometime in June in a private school, and then made its appearance in the Abbey Road Roman Catholic School which is in close proximity to the former school. A considerable number of the children were attacked, but it was not necessary to close the school. There then seems to have been a period of quiescence until October, when many of the Infants attending Upton Schools took it, that department being closed for a fortnight. In November Tor Infants' was closed, soon followed by Upton Girls' and Infants' Schools and St. James', and in December Tor Girls' and all departments of Ellacombe were closed. As so many schools were closed, and as there were cases at other schools the Education Authority gave instructions for the remaining schools to be closed a week previous to the day fixed for closing for the Xmas holidays.

The epidemic was widely spread, and not only children but many adults affected, in some instances the parents and children being all ill at the same time. It seems impossible to prevent the spread of mumps, as children, excluded from school on account of it, are seen running about the streets with their throats bound up.

INFLUENZA.

Influenza accounted for eleven deaths.

DIARRHŒA AND ENTERITIS.

Nine deaths were attributed to diarrhœa, seven being infants under one year. There were also nine deaths registered as being due to enteritis. As these were all infants under one year, according to the instructions of the Local Government Board, eight were added to the nine diarrhœa deaths. One was not, as in this case the death certificate specifically stated it was non-zymotic in character.

PHTHISIS AND TUBERCULAR DISEASES.

The number of deaths from Phthisis was 56, of whom 21 were visitors. As fourteen of the visitors died in public institutions they must be deducted as non-residents; but we also have to add the deaths of five inmates of the Newton Abbot workhouse, who belonged to Torquay, so that the total is 47 for the year, against 45 in 1905. The rate per 1,000 is 1·38.

The rates per 1,000 for the past five years are as follows :—

1906	1905	1904	1903	1902
1·38	1·32	1·21	1·10	1·42

Other forms of Tubercular disease accounted for 8 deaths, the same as in 1905.

During the year a circular letter was received from the National Association for the Prevention of Consumption. I was instructed to report to the Sanitary Committee on its contents.

The circular of the Association is issued with the object of obtaining the organised and co-ordinated efforts on the part of public authorities of various kinds, who are, directly or indirectly, charged with the care of the poor, or the maintenance of public health, in dealing with consumption.

The circular points out that—

The prevention of consumption is a National question, and more especially one for Sanitary Authorities, as it is one that has to do with the health of the community under their charge.

That the total deaths in England and Wales average about 60,000 per annum from this disease, exceeding that from all other forms of infectious disease. As the disease is most prevalent at the age when the working and wage earning capacity of the individual is at its best, the result of prolonged illness soon exhausts the resources of the family, and leads to poverty and privation, which predisposes the children to all forms of disease. The direct cost, and indirect loss to the country must be reckoned in tens of millions of pounds. Phthisis is thus a cause as well as a consequence of poverty.

That prevention is possible.

That the spread of consumption is by the tubercle bacillus, which are present in large numbers in the sputum or spit of the patients.

The chief problem, therefore, for public authorities, is the destruction of the expectoration, and for this purpose all phthisical patients ought to be under supervision.

Three classes of cases have to be dealt with—

1. The advanced cases, unfit for work and mostly confined to the house.
2. Patients not yet seriously ill, still following their usual occupations, and frequenting public places.
3. Those in quite the early stages of the disease.

The first step in the programme of prevention will be to ascertain how many of each group there are in a given area, and where they are. This can be accomplished by voluntary notification. This system is in operation in 18 of the 29 London Boroughs; and in Manchester, Liverpool, and Brighton, and many other large towns, where it has been most successful. As this system brings to light all those cases about which it is desirable to know, compulsory notification may be regarded as undesirable, except that it might be made obligatory on Poor Law Medical Officers.

When the cases are known, it is possible in a certain proportion of the advanced cases to surround them with precautions, which would be likely to prevent infection, and here it is desirable that these persons should be removed to some institution, or an infirmary, specially provided, as it is desirable that the stigma of pauperism should not be added to the sting of poverty. This, however, can only be effected by combined action on the part of several sanitary authorities.

Active steps should be taken to prevent spitting by consumptives. Bye-laws should be framed to make spitting in public places a punishable offence, and where such a bye-law has been framed, it should be rigorously enforced. Notices, pointing out the danger arising from spitting, should be more widely disseminated. The health authorities might arrange for the provision of cheap pocket spittoons to patients.

Sanatorium treatment of early cases ought to be provided, but as this would cost a large amount of money, the National Society advise the employment of unoccupied accommodation, such as vacant wards or beds in isolation hospitals or workhouse infirmaries, the former method being carried out in Brighton. The patients are by this means not only benefited by their stay in such institutions, but are educated in the methods of treatment, and on their return home, generally follow out their instructions as to the destruction of all expectoration, observe the rules of domestic and

personal cleanliness, of wholesome feeding, keep up free ventilation in their rooms night and day by open windows and unstopped chimneys.

There ought to be close relations between the Medical Officer of Health and the various charitable and philanthropic organisations in the district, so as to be able to command, after due enquiry, assistance for phthisical patients and their families.

The necessity for strict disinfection of houses in which consumptive persons have lived or died.

Educational measures, such as the distribution of leaflets, and simple instruction in elementary schools.

CONCLUSIONS.

The importance of many of the points brought out by this circular have been recognised by this Council, and they have already taken certain of the steps recommended. They may be summarised as follows :—

1. Free disinfection of rooms after death of consumptives and, where aware of it, of rooms recently occupied by them.
2. The framing of a bye-law prohibiting spitting in places of public resort.
3. Distribution of educational leaflets by such agencies as are likely to reach those for whom they are intended.

After fully considering the subject, it was decided to adopt the voluntary notification of phthisis, and in June a circular letter to this effect was sent to all the medical men practising in the Borough. Since then only 14 cases have been notified ; this fact, together with what I have gleaned in conversations with various medical practitioners, leads me to believe that voluntary notification is not likely to be a success. I am, therefore, inclined to think that the time has arrived when the Government should include this disease among those which are compulsory notifiable, with this proviso, that cases should be dealt with on similar lines to that in force in Sheffield.

This is the opinion of the Metropolitan Branch of the Incorporated Society of Medical Officers of Health, who have unanimously *passed* a resolution to the effect that they consider it

desirable that in London tuberculosis of the lungs should be compulsory notifiable. The above resolution was the outcome of a paper read by Dr. Louis Parkes, in which he pointed out that the system of voluntary notification had been a comparative failure due to the professional relations subsisting between a medical man and his patient. No medical man was justified in imparting professional knowledge acquired from a patient to any one else without the consent of the patient. There was naturally a prejudice in the minds of most patients, no matter what their social standing, against consenting to a divulgence of a knowledge of their condition to any one outside their own immediate circle. If medical men were bound by law to notify such cases, it would be unnecessary to obtain the patient's consent. In support of his contention for compulsory notification, Dr. Parkes showed how well the system had worked in Sheffield, where it had been in force since November, 1903, which powers were obtained under an Act of Parliament. Here, every medical man was bound to notify each case of phthisis occurring in his practice in the same way that he notified cases of any other infectious disease. If he did not wish his patient visited by the Medical Officer of Health, or one of his staff, he filled up a form to that effect, which he transmitted with the certificate, and no such visit was made. In these cases it is expected that the medical attendant will himself instruct the patient to observe the necessary precautions to prevent the spread of the disease to other persons. The mere fact of notification confers no powers upon the Medical Officer of Health, or his staff, which they do not possess under existing statutory enactments. Consequently there is no compulsion on consumptive patients to submit to isolation at home, or to removal to hospital, or to give up their occupations, or to undergo any supervision or control. The only extra power given under the notification section of the Sheffield Corporation Act, 1903, was that of enabling the Medical Officer of Health to enforce the disinfection and cleansing of the premises that had been in the occupation of a consumptive, and to require the removal for disinfection of any bedding, clothing, or other article which had been exposed to the infection of tubercle. No provisions contained in any local Act of Parliament relating to infectious disease applied to tuberculosis of the lungs, or to any proceedings relating thereto. In this way the measures adopted by the sanitary authority after receipt of the notification were deprived of any possibility of being harsh or creating any hardship for poor consumptives, which they were not *at present* called upon to bear. The whole object of compulsory notification in Sheffield, as it would be elsewhere when adopted on

similar lines, was to educate in methods of hygiene, by persuasion and advice, persons who were subjects to a communicable disease, but who, through ignorance or carelessness, were liable to be the means of spreading the disease to others, and not to hedge them about by disabilities, which would have the effect of cutting them off from social intercourse. On such lines as these there was no reason to expect any opposition from the medical profession or the public.

CANCER.

Cancer was responsible for 49 deaths, of whom three were visitors, and three occurred in the Newton Abbot Workhouse. In 1904 there were 42, and in 1905, 47.

It must be borne in mind that in a health resort such as Torquay, Cancer patients are frequently sent in the hope that the mild climate and bright sunshine may possibly prolong their lives. This materially increases the death rate from this disease. Again, as I previously stated, no conclusion of any value can be deduced from a bare comparison between the death rates of two populations very differently constituted as to age and sex. In a community such as Torquay, where the number of persons at advanced ages and of females is greater than that pertaining to the country as a whole, we expect to find a greater number of persons dying from Cancer.

The death rate from Cancer in Torquay during 1906 was equal to 1·44 per 1,000 per annum. If this rate is corrected for age and sex, it would be equal to 1·19 per 1,000. The last published rate for England and Wales is for 1904, when it equalled '89 per 1,000.

AGE AND SEX DISTRIBUTION OF CANCER DEATHS.

	under 30	30—35	35—45	45—55	55—65	65—75	over 75	Totals
Males	1	1	0	2	4	5	1	14
Females	1	0	5	8	7	9	5	35
Total	2	1	5	10	11	14	6	49

The following table gives the chief headings under which deaths from Cancer occurred :—

REGISTERED DEATHS FROM CANCER (MALIGNANT DISEASE).

Seat of Disease.	Sarcoma.		Carcinoma.		Malignant Disease or Cancer.		Total.
	M.	F.	M.	F.	M.	F.	
Face, Jaw, Tongue	0	0	0	1	2	0	3
Throat and Thorax	0	0	0	0	0	0	0
Oesophagus	0	0	1	0	0	0	1
Stomach and Pylorus	0	0	2	3	2	5	12
Liver and Pancreas	0	0	2	2	0	1	5
Intestines (excluding Rectum) ..	0	0	1	1	0	2	4
Rectum	0	0	0	0	1	1	2
Breast	0	0	0	3	0	5	8
Uterus and Appendages	0	0	0	3	0	4	7
Parts not specified	1	2	1	1	1	1	7
Totals	1	2	7	14	6	19	49

SANITARY WORK, 1906.

There have been no changes in the staff of the Sanitary Department during the year. Full details of the work carried out by the Sanitary Inspectors are contained in their reports, which are appended.

SLAUGHTER HOUSES.

There are eight slaughter-houses in the Borough. Four are registered, one has a perpetual license, while three require to be licensed each year.

I have inspected them several times during the year, and on the whole found them kept clean and in a satisfactory condition. The Local Government Board's model bye-laws have been adopted by the Council. They enable us to have the buildings regularly limewashed, and enforce other matters of cleanliness.

The fact of having so many private slaughter-houses, and also that a considerable amount of meat is brought in from a distance by train, renders the proper inspection of meat impossible,

No complaints reached me during the year of the nuisance that used to arise from the spreading of slaughter-house manure outside the district.

SALE OF FOOD AND DRUGS ACT.

Samples are taken by the County Police. The following is a summary of their action under the Act :—

Article.	No.	Result of Analysis.	Remarks.
Milk	38	36 genuine 1 deficient in milk fat to the extent of at least 9%. 1 deficient in fat to the extent of 8.6%.	The Vendor was summoned and case dismissed. The Vendor was summoned and case dismissed, on payment of costs.
Corned beef	2	Bacteriological examination. Sterile. Contents good and clean. Bacteriological examination. Sterile. Contents free from dirt.	
Ham & chicken	1	Boric Acid present. Bacteriological examination. Sterile. Contents appear good and free from dirt.	
Canned beef	1	Boric Acid present. 45 grains per lb; some saltpetre also present. Bacteriological examination. Sterile. Contents of tin clean.	
Lemon	1	Bacteriological examination. Sterile. Contents of tin clean and appear good.	
Onion soup	1	Small quantity of Boric Acid. Bacteriological examination. Sterile. Contents appear good.	
Garlic	6	Genuine	
Peas	6	Genuine	
Beans	6	Genuine	
Apples	1	Genuine	
Oranges	6	Genuine	
Peaches	6	Genuine	
Total	75		

During the year a notice was sent to the various milk dealers, warning them against the use of preservatives in milk; it is satisfactory to note that no samples were found to contain it.

As a result of the exposure of the methods adopted in the American meat packing factories, the Local Government Board issued instructions that samples of tinned foods were to be taken and submitted for examination. Six samples were examined by the

County Analyst, and with the exception of a small amount of boracic acid, found in two, the contents were found to be sterile and clean.

MILK.

The system of inspecting both the cowsheds and dairies in the Borough, and also the outside dairy farms from which many dealers receive their supply, is carried out twice a year. Particulars are obtained of the condition of the cowsheds to cleanliness, lighting, ventilation, and paving; the washing of milk vessels; cleanliness of dairies, etc.; the water supply as regards its freedom from pollution; and the number and condition of the cows being milked.

After these inspections a complete register is compiled of all dairies and cowsheds in the Borough, together with the farms outside which supply them with milk, etc. This register is printed in the form of a bill, and is posted up throughout the town, copies being forwarded to all dairymen and farmers concerned. Such bills are a guarantee that we are satisfied with the sanitary state of the places inspected, and is in force for six months. Thus two thorough inspections are made each year.

Although this periodic inspection cannot guarantee that the cowsheds, etc., are constantly kept as they ought to be, yet it ensures that at least twice a year they get a thorough cleaning and limewashing, which in many instances would not be done if the visits were not made. It is also frequently possible for us to get owners to substitute brick or cement for defective cobble paving, which reduces the difficulty of cleaning to a minimum. Again, by this system we know precisely what farms supply the various town purveyors, and have a full knowledge of the farm, water supply, and other details, which are of immense value when investigating the source of infectious disease.

Although such inspections as these are a step in the right direction, yet it seems probable that after the second interim report of the Royal Commission on Tuberculosis, just published, more thorough inspections, especially of the cows, will be enforced by the Government.

This report is of extreme interest to all engaged in safeguarding the public health. It will be remembered that at the International Congress on Tuberculosis, held in London in 1901, Prof. Koch stated that as the result of certain investigations made by him, he believed that human and bovine bacilli are different in kind, and the statement was made that the likelihood of human beings becoming infected to any serious degree with bacilli of

bovine origin, was so slight that it might be regarded as of little practical moment. Naturally the opinion of so eminent a bacteriologist was widely used by those interested in the matter financially for their own ends. The report of the Royal Commission has disproved the above opinion of Prof. Koch, and, it is hoped, will put an end to this erroneous theory, which has had such a baneful influence upon the interests of public health. The Commissioners state:—"There can be no doubt that, in a certain number of cases, the tuberculosis occurring in the human subject, especially in children, is the direct result of the introduction into the human body of the bacilli of bovine tuberculosis; and there also can be no doubt that, in the majority at least of these cases, the bacillus is introduced through cow's milk. Cow's milk is clearly a cause of tuberculosis, and of fatal tuberculosis in man." This opinion is amply proved by numerous experiments carried out by the Commission. They further state "A very considerable amount of disease and loss of life, especially among the young, must be attributed to the consumption of cow's milk containing tubercle bacilli." Again "The presence of tubercle bacilli in cow's milk can be detected, though with difficulty, if the proper means be adopted, and such milk ought never to be used for food. There is far less difficulty in recognising clinically that a cow is suffering from tuberculosis, in which case she may be yielding tuberculous milk. The milk coming from such a cow ought not to form part of human food, and indeed ought not to be used as food at all. Our results clearly point to the necessity of measures more stringent than those at present enforced being taken to prevent the sale or consumption of such milk." Such plain speaking on the part of a Commission, composed of such eminent scientific men as this one is, must surely result in the Government taking the necessary steps to enable Sanitary Authorities to see that milk infected with tubercle will not be consumed in their districts.

There are 93 registered dairymen and cowkeepers in the Borough who receive milk from farms situated outside.

ICE CREAM.

There are three manufacturers of ice cream which is sold from barrows. They were all inspected, and were found to be clean and apparently well looked after.

FACTORY AND WORKSHOPS' ACT.

Details of the working of this Act will be found in the reports of the Sanitary Inspectors. Endeavours are made to inspect each workshop once a year, but it is not always possible to accomplish.

I have visited a considerable number of those on the list in company with the Inspectors. During the year a circular was received from the Home Office, drawing attention to neglect on the part of many Sanitary Authorities in dealing with the question of home work, and asking that more care should be exercised in recording the steps taken with reference to visits paid to home-worker's premises. The number of outworkers in Torquay is very small, and all are engaged in the making of wearing apparel; much difficulty is experienced in obtaining lists of outworkers which employers are bound under penalty to send in to the Authority twice a year, once in February and one in August. I have a printed circular which is sent a day or so after the notices should have been received drawing employers' attention to this provision of the Act, and yet in many cases it requires a special visit in order to obtain the necessary information. During the year all the outworkers' premises were visited and found to be satisfactory, many outworkers being engaged in business on their own account as well. No case of infectious disease has been reported on out-worker's premises. Where outworkers resided in other districts, notices with the names and addresses were sent to the Authorities of those districts.

BAKEHOUSES.

I make a point of inspecting these premises with the Inspectors. There are 57 on the register. Two have certificates as satisfactory underground bakehouses. I have had no complaint to make about their condition. Occasionally limewashing is required, but this is at once done when requested. During the past summer I was informed by the police that a baker, who makes ginger biscuits for sale at the various regattas, was employing a number of young girls, at all hours, to pack them in boxes. The information was forwarded to H.M. Inspector of Factories, but he was unable to obtain sufficient evidence of illegality to justify him in taking up a prosecution.

OFFENSIVE TRADES.

There are two tripe-boiling establishments in the Borough. One building is situated in Upton, is specially constructed for the purpose, and is always found clean and well looked after. The other is at Hele and requires considerably more supervision.

On several occasions we have had to complain of the large accumulation of bones and rabbit skins at the chief marine store, *but they are quickly removed when a notice is sent.* More frequent

visits are now being paid to prevent a recurrence. A new marine store has been started in Upton without the consent of the Council. The matter is still under the consideration of the Sanitary Committee.

COMMON LODGING HOUSES.

There are five registered common lodging-houses. They are regularly inspected and found in a fairly satisfactory condition. One has changed hands during the year, and is now much better attended to.

HOUSING OF THE WORKING CLASSES.

The members of the working classes are on the whole well housed. Nothing calls for special comment on this subject.

HOUSE DRAINAGE.

The inspection and testing of the drains of all new buildings is done by the Sanitary Inspectors; some 128 systems were tested during the year.

THE GRANTING OF SANITARY CERTIFICATES BY THE CORPORATION.

The number of certificates granted in this and previous years is as follows:—1906, 60; 1905, 66; 1904, 89; 1903, 66. It is then seen that year by year a large number of large houses (certificates seldom demanded in small houses) are brought up to date as regards their sanitary requirements. In my opinion no intending tenants should be satisfied unless they receive a certificate of recent origin.



The administration of the Factory and Workshop Act, in connection with **FACTORIES, WORKSHOPS, LAUNDRIES, WORKPLACES, AND HOMEWORK.**

1.—INSPECTION.

INCLUDING INSPECTIONS MADE BY SANITARY INSPECTORS OR INSPECTORS OF NUISANCES.

Premises.	Number of		
	Inspections.	Notices.	Prosecutions.
FACTORIES (Including Factory Laundries)	6	2	Nil
WORKSHOPS (Including Workshop Laundries)	229	50	
WORKPLACES (Other than Outworkers' premises included in Part 3 of this Report.)	19	—	
Total	254	52	Nil

2.—DEFECTS FOUND.

Particulars.	Number of Defects.			Number of Prosecu- tions.
	Found.	Remedied.	Referred to H. M. Inspector.	
<i>Nuisances under the Public Health Acts :—*</i>				
Want of cleanliness	29	29	0	0
Want of ventilation				
Overcrowding	6	6	0	0
Want of drainage of floors				
Other nuisances	5	5	0	0
† Sanitary accommodations { insufficient	6	6	0	0
{ unsuitable or defective				
{ not separate for sexes				
<i>Offences under the Factory & Workshop Act :—</i>				
Illegal occupation of underground bake- house (S. 101)				
Breach of special sanitary requirements for bakehouses (ss. 97 to 100)				
Other offences (Excluding offences relating to outwork which are included in Part 3 of this Report.)	1	1	1	0
Total	47	47	1	0

* Including those specified in Sections 2, 3, 7, and 8 of the Factory and Workshop Act as remediable under the Public Health Acts.

† For districts not in London state here whether section 22 of the Public Health Acts Amendment Act, 1890, has been adopted by the District Council; and if so what standard of *sufficiency* and *suitability* of sanitary accommodation for persons employed in factories and workshops is *forced*.

WORK IN
FECTED
EMISES,
ONS 109, 110.

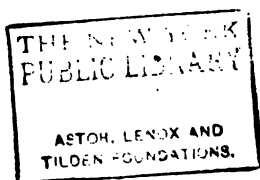
N	Orders made S. 110).	Prosecutions (Sections 109, 110).
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4.—REGISTERED WORKSHOPS.

Workshops on the Register (S. 131) at the end of the year.						Number.
Workshop Bakehouses, may be enumerated here.	Workshop Bakehouses	..	..	..	..	56
	Workshop Laundries	..	..	..	..	52
	Other Workshops	..	..	..	..	287
	Total number of workshops on Register	..	..	..	..	395

5.—OTHER MATTERS.

Class.										Number.
Notified to H.M. Inspectors of Factories :—										
Lure to affix Abstract of the Factory and Workshop Act (S. 133)										3
Action taken in matters referred to H.M. Inspectors as remediable under the Public Health Act, but not under the Factory and Workshops Act (S. 5)										2
Notified by H.M. Inspector										
Reports (of action taken) sent to H.M. Inspector										2
er										10
Ground Bakehouses (S. 101) :—										
Licenses granted during the year										0
Licenses at the end of the year										2

TABLE I.
VITAL STATISTICS OF WHOLE DISTRICT DURING 1906 AND PREVIOUS YEARS.

Year.	Population estimated to Middle of each Year.	BIRTHS.		Total Deaths Registered in the District.				Total Deaths in Public Institutions in the District.	Deaths of Non-Residents registered in Public Institutions in the District.		Deaths of Residents registered in Public Institutions beyond the District.		NETT DEATHS AT ALL AGES BELONGING TO THE DISTRICT.	
		Number.	Rate.*	Under 1 year of age	Rate per 1,000 Births registered.	Number.	Rate.*		Number.	Rate.*				
1	2	3	4	5	6	7	8	9	10	11	12	13		
1896.	33300	650	19.5	107	163	569	17.1	43	41†		528	15.9		
1897.	33300	630	18.9	81	128	502	15.0	43	83†		419	12.5		
1898.	33400	626	18.7	83	132	529	15.5	50	70†		459	13.7		
1899.	33500	573	17.0	84	143	570	17.0	31	49†		529	15.5		
1900.	33600	559	16.6	70	124	488	14.5	41	58†		430	12.8		
1901.	33625	556	16.5	70	125	504	15.0	51	28		476	14.1		
1902.	33625	540	16.0	84	155	529	15.7	63	38		491	14.6		
1903.	33800	536	15.9	51	95	455	13.4	57	28	21	448	13.3		
1904.	33850	530	15.7	64	120	473	13.9	42	20	29	482	14.2		
1905.	33900	522	15.4	50	101	473	13.9	46	12	31	491	14.5		
Averages for Years 1896-1905.	33580	572	17.0	75	130	509	15.1	47	43	—	475	14.1		
1906.	33950	556	16.6	61	107	475	13.9	50	19	43	499	14.6		

* Rates in columns 4, 8, and 13 calculated per 1,000 of estimated population.

† Include deaths of all visitors.

TABLE II.

VITAL STATISTICS OF SEPARATE LOCALITIES IN 1904-5-6.

LOCALITIES.	Population Census 1901.	1904.			1905.			1906.		
		Births registered.	Deaths at all Ages.	Deaths under 1 year.	Births registered.	Deaths at all Ages.	Deaths under 1 year.	Births registered.	Deaths at all Ages.	Deaths under 1 year.
...	3851	50	51	5	50	76	4	49	58	4
...	3576	42	45	4	39	42	4	41	37	3
...	4339	92	84	13	87	63	8	100	84	14
abe...	5911	124	82	16	118	82	13	132	80	18
...	3129	51	50	11	52	43	5	52	41	9
d ...	3644	21	51	2	27	37	0	37	51	4
ry-Church	3312	47	49	6	62	52	7	48	53	6
ombe	3264	63	36	4	52	46	7	58	39	1
on ...	2599	34	25	3	30	31	2	37	32	1
orough	33625	524	473	64	517	472	50	554	475	60

NOTE.—This table only includes deaths and births registered in the district.

TABLE III.
CASES OF INFECTIOUS DISEASE NOTIFIED DURING THE
YEAR 1906.

NOTIFIABLE DISEASE.	Cases notified in whole district.							Total cases notified in each locality.								No. of cases removed to hospital fr'm each locality										
	At all ages.	At Ages—Years.						Torre	Waldon	Upton	Ellacombe	Strand	Torwood	S. Marych.	Babe'mbe	Chelston	Torre	Waldon	Upton	Ellacombe	Strand	Torwood	S. Marych.	Babe'mbe	Chelston	
		Under 1	1 to 5	5 to 15	15 to 25	25 to 65	65 and upwards																			
Small-pox ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cholera ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Diphtheria ..	2	—	—	2	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Membranous croup	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Erysipelas ..	2	—	—	—	—	2	—	—	—	1	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—
Scarlet fever ..	34	—	6	16	6	6	—	2	3	4	7	5	6	5	—	2	2	2	3	7	3	6	4	—	2	—
Typhus fever ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Enteric fever ..	11	—	—	1	5	5	—	—	1	1	—	8	1	—	—	—	—	—	—	—	—	—	—	—	—	—
Relapsing fever ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Continued fever ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Puerperal fever ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Plague ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Totals ..	49	—	6	19	11	13	—	2	4	5	9	5	14	8	—	2	2	2	3	7	3	9	4	—	2	—

NOTES.—The localities adopted for this table are the same as those in Tables II. and IV.

Isolation Hospital :—Newton Abbot Road, outside the Borough.

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TABLE V.

INFANTILE MORTALITY DURING THE YEAR 1906.

DEATHS FROM STATED CAUSES IN WEEKS AND MONTHS UNDER ONE YEAR OF AGE.

CAUSE OF DEATH.		Under 1 Week.	1-2 Weeks.	2-3 Weeks.	3-4 Weeks.	Total under 1 Month.	1-2 Months.	2-3 Months.	3-4 Months.	4-5 Months.	5-6 Months.	6-7 Months.	7-8 Months.	8-9 Months.	9-10 Months.	10-11 Months.	11-12 Months.	Total Deaths under One Year.
ALL CASES.	Certified	16	1	4	2	23	10	2	6	1	4	1	5	3	3	1	59	
	Uncertified	2	-	-	-	2	-	-	-	-	-	-	-	-	-	-	2	
Infectious diseases.	Small-pox	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Chicken-pox	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Measles	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Scarlet Fever	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Diphtheria: Croup	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	
Respiratory diseases.	Whooping Cough	-	-	-	-	-	-	-	2	-	-	-	1	1	1	-	7	
	Diarrhoea, all forms	-	-	-	-	-	2	-	2	-	-	-	-	-	-	-	-	
	Enteritis, Muco-enteritis, Gastro-enteritis	-	-	1	-	1	2	1	-	-	2	-	-	-	-	1	7	
	Gastritis, Gastro-intestinal Catarrh	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	2	
	Premature Birth	11	1	-	1	13	-	1	2	-	-	-	-	-	-	-	16	
Injuries.	Congenital Defects	1	-	-	-	1	-	-	-	-	-	-	1	-	-	-	2	
	Injury at Birth	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	
	Want of Breast-milk, Starvation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Atrophy, Debility, Marasmus	1	-	2	-	3	2	-	-	-	-	-	-	-	-	-	5	
	Tuberculous Meningitis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Tuberculous diseases.	Tuberculous Peritonitis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Tuberculous Mesenterica	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Other Tuberculous Diseases	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Erysipelas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Syphilis	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	
Other diseases.	Rickets	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Meningitis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	(not Tuberculous)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Convulsions	4	-	1	1	6	2	-	-	-	-	-	1	1	-	-	10	
	Bronchitis	-	-	-	-	-	1	-	-	-	1	-	1	-	-	-	3	
Other causes.	Laryngitis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Pneumonia	-	-	-	-	-	-	-	-	1	-	-	1	1	1	-	4	
	Suffocation, overlaying	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Other Causes	2	-	-	-	-	-	-	1	-	1	-	-	-	-	-	2	
		18	1	4	2	25	10	2	6	1	4	1	5	3	3	1	61	

District (or Sub-Division) of NEWTON ABBOT.

POPULATION.

Births in the year { legitimate - 541.
 { illegitimate - 25.

Estimated to middle of 1906.
 33950.

Deaths from ALL CAUSES AT ALL AGES, 499.

BOROUGH OF TORQUAY.

SANITARY INSPECTORS' REPORTS.

CHIEF SANITARY INSPECTOR'S REPORT.

TOWN HALL CHAMBERS,

18th February, 1907.

*To His Worship the Mayor, Aldermen, and Councillors of
the Borough of Torquay.*

GENTLEMEN,

I have the honour to make this my Twenty-ninth Annual Report to the Urban Sanitary Authority.

The work has been of the usual kind, namely, the inspection of premises upon receipt of complaint of unsanitary conditions ; or after cases of infectious diseases have been notified to exist ; also the thorough examination of the sanitary arrangements of superior houses ; or of business premises at the request of owners, agents, or intending occupiers ; likewise where additions or re-constructions were in progress.

Fewer cases of this latter class have claimed my attention than in previous years, viz., twenty-five, as compared with thirty-four in 1905, by reason of the fact that there are not so many villas vacant in those Wards under my special charge—Torre, Chelston, Waldon, and parts of Strand and Upton.

Certificates were requested and, after due testing, given in seventeen of these cases, where the owners, of their own accord, *did the necessary work* to enable me to grant them ; in which *cases no fees were paid.*

Of this type were the new drainage systems at The New Capital and Counties Bank, and at the Wilts and Dorset Bank, and other business premises.

Very considerable time and attention have been demanded and given to the laying of new drains, and general sanitary arrangements of the Torbay Hotel, which has now about treble its former accommodation ; the drains have been smoke and water-tested in sections—about twenty separate operations being necessary ; likewise the work of a similar type at Tor Abbey, still in progress, and its three lodges—these latter have been thoroughly re-drained and put in sound sanitary condition.

In addition, seventy-eight smaller houses have been more or less dealt with, as occasion required, and obvious defects remedied.

DISTRICT INSPECTION.

In my last Report, it was stated that a house to house inspection had been made of Rosery Cottages, Chelston, for sufficient reasons, and that serious defects had been found in the majority of them ; also, that about one-half of them, at the end of 1905, had been put in order. I have now to state that the remaining sixteen houses have undergone the necessary alterations, and all were left in a proper condition before last Mid-summer.

TORRE STATION.

The matter of proper accommodation for sanitary purposes of the men employed at Torre Station, mentioned in my last Report, has not been lost sight of ; but the Railway Authorities appear to be an unconscionably long time in arriving at the necessary decision to do the work. I have been officially informed that several sets of plans for reconstruction have been prepared and sent to Paddington for sanction, but nothing as yet has been done.

DETAILS OF OPERATIONS.

The following is a tabulated statement of the several operations carried out in the various premises which came under my observation :—

- 48 New sanitary conveniences, with water supply.
- 45 Ventilators for soil pipes and drains.
- 102 Intercepting traps and inspection chambers.
- 110 Gully traps set instead of " D " traps.
- 42 New sets of drains laid.
- 32 Mason's traps abolished.
- 21 Yards paved and drained.
- 23 Taps from main service for drinking water.
- 118 Premises limewashed and disinfectants supplied.

- 11 Ashbins provided.
- 4 New roofs put on.
- 43 Accumulations of offensive matter removed.
- 19 Rooms were fumigated after infectious diseases, seven of which were after phthisis cases.
- 17 Nuisances from keeping of fowls, or animals, abated.
- 227 Letters and reports on departmental business were written.
- No legal or other notices were found necessary.

NEW BUILDINGS.

The number of new houses erected in 1906 was twenty-seven, as compared with only fifteen examined in 1905. Amongst these are two villas at Livermead, which will be connected with the new sewerage scheme for that locality, which has some choice building sites.

FACTORIES AND WORKSHOPS : BAKEHOUSES.

The customary inspections of workshops and work places have been made, and much improvement was observed in most of them on the score of cleanliness and ventilation.

In all cases where any alteration was desired, verbal notice was given to the persons concerned, and this sufficed to ensure the recommendations being carried out. The list is classified as follows :—

- 22 Dressmakers and milliners.
- 10 Plumbers and painters.
- 9 Builders and carpenters.
- 9 Tailors.
- 7 Blacksmiths.
- 6 Laundries.
- 5 Cabinet makers.
- 4 Watchmakers.
- 5 Coachbuilders.
- 1 Bootmaker.
- 1 Knitter.
- 2 Trunk makers.
- 3 Printers.
- 3 Saddlers.

Also, 17 bakehouses were visited, and found, generally speaking, in a satisfactory condition. This gives a total of one hundred and four premises inspected and dealt with under the provisions of the Factories and Workshops Act ; the places where some " outworkers," who got employment from shops, were also examined, and were found adapted for the purpose.

MILKSHOPS AND DAIRIES.

The regular half-yearly visits have been paid to the twenty-one milkshops and dairies situate in the Wards under my care, and I have pleasure in making a favourable report regarding all of

them. Eight cowsheds outside the Borough, in the Parish of Cockington, were likewise inspected, in company of the Medical Officer : regular whitewashing was apparent in all save one case. Verbal notice was given to the farmer, who promised to comply.

As one of the Council's Delegates, I attended the Congress of the Royal Sanitary Institute, which was held in the City of Bristol last July ; and I beg to say that I derived much valuable information from the Conferences and the Health Exhibition open at the same time.

A detailed report of the proceedings was prepared in due course by your Delegates, and was ordered to be printed and circulated amongst the Council.

I must thank you for the honour done me by appointing me as a representative.

I am, Mr. Mayor and Gentlemen,

Yours obediently,

CHAS. MACMAHON,

*C. Royal San. Inst., Assoc. Mem. B. Inst. P. Health ;
Chief Sanitary Inspector.*



SANITARY INSPECTOR'S REPORT.

TOWN HALL CHAMBERS,
ARCADE, TORQUAY,

January 28th, 1907.

*To His Worship the Mayor and to the Aldermen and Councillors
of the Borough of Torquay.*

GENTLEMEN,

I have pleasure in making this my Ninth Annual Report to the Council for the year ending 31st December, 1906, dealing with that portion of the Borough under my supervision, viz., the wards of Torwood, Strand, Upton, and Ellacombe.

One hundred and eighteen houses and premises have been visited and inspected on receipt of complaint, or by request; and sixty-seven smoke and twenty-three hydraulic tests applied to the drains in various instances.

Eighty-three notices were served to abate nuisances, and of these eighty were preliminary and three legal.

One hundred and eighty visits of inspection were made to premises where work was in progress; and also one hundred and sixty-seven smoke and one hundred and forty-four hydraulic tests applied to the drains in various instances.

Upon application being made for sanitary certificates, thirty houses were examined and reported upon, and on completion of the work found necessary to comply with the requirements laid down by the Council, certificates were granted in twenty-eight instances. In the other two cases the work was not carried out.

The 10s. testing fee was paid in each case—a total of £15 received, or £3 in excess of last year.

In connection with this work, one hundred smoke and one hundred and twenty-one hydraulic tests were made, and fifty-three visits of inspection made while work was in progress.

In connection with the new buildings in my district, one hundred and thirty smoke tests were applied to the drains of sixty-six houses and premises, including the new Free Library. Twenty-four of these houses were examined on completion, and were certified as fit for habitation.

A house to house inspection was made of a block of eight houses, and as a result it was found necessary to serve notices to abate nuisances from eight defective drains, two dirty premises, one case of overcrowding. Each house was re-drained, scullery sinks provided, and a supply of water direct from the main laid to same.

DETAILS OF OPERATIONS.

- 50 New sets of house drains laid.
- 12 Defective house drains repaired.
- 1 Old masonry drain found and abolished.
- 40 Intercepting traps with fresh air inlets fixed.
- 22 Old mason's traps abolished.
- 79 Inspection chambers to drains built.
- 35 Drains ventilated at head of system.
- 31 New sanitary conveniences with water supply fixed.
- 17 Soil pipes fixed outside buildings and ventilated.
- 71 Old iron and brick traps removed and earthenware gullies fixed.
- 9 Old pan closets removed.
- 2 Water supplies laid on to w.c.'s found to be without.
- 22 " " direct from main to taps over sinks.
- 57 Waste pipes from baths, lavatories, and sinks trapped.
- 15 Choked drains cleared.
- 10 Defective w.c. cisterns repaired.
- 37 Ashbins for house refuse provided.
- 8 Offensive accumulations removed.
- 6 Nuisances from keeping fowls and animals abated.
- 5 Dirty premises limewashed and cleansed.
- 8 Nuisances from stables and manure pits abated.
- 31 Rooms disinfected.
- 19 Defective yards and areas re-paved.
- 7 Cases of overcrowding abated.
- 10 New pantry and scullery sinks provided.
- 2 Defective rain water tanks abolished.
- 3 Defective floors repaired and ventilated under.

609 Total

As in the previous year, a considerable amount of time has been taken up in connection with the inspection and abatement of premises under the Factory and Workshops Act.

Seventeen written and verbal notices were given to remedy the following defects:—

- 1 Defective w.c.
- 10 Dirty premises.
- 5 Overcrowding.
- 1 Accumulation of offensive matter.

17 Total

Number.	Description of Trade.	No. of workrooms or workplaces
30	Laundries	58
36	Dressmaker and Milliner	54
5	" " Outworkers	5
1	Corset Maker	1
16	Tailor	23
7	" Outworkers... ..	7
3	Bootmaker	3
6	Saddler and Harness Maker	6
2	Sailmaker	2
1	Coachbuilder	3
1	Wheelwright	2
2	Shoeing Smith	2
1	Wood Turner	1
5	Upholsterer and Cabinet Maker	17
1	Blind Maker	3
2	Umbrella and Trunk Maker	2
1	Picture Framer	1
2	Photographer	4
4	Watchmaker and Jeweller	4
1	Electro-plate Works	2
4	Printing Works	10
1	Dye Works	1
3	Cycle Works	7
21	Plumber and Painter	21
8	Builder	22
2	Marble Mason	2
5	Quarries	5
2	Ironmonger and Smith	6
20	Baker and Confectioner	20
193		294

During the month of May, and again in October, I have made the half-yearly inspection of forty-two dairies, milkshops, and cowsheds situate in my district. In several instances it was necessary to enforce lime washing, and also to caution small purveyors where milk was kept in shops with other goods.

Also during May, and again in November, the dairies and cowsheds on thirty-five farms outside the Borough, and situate in the following districts, have been visited and examined in regard to the supply of milk, &c., sent into the town :—

Garabridge	Dainton	Paignton
Wrangaton	Abbotskerswell	Churston
Brent	Kingskerswell	Bovey
Totnes	Marldon	

It is pleasing to be able to report on the marked improvement which has and is still taking place in cleanliness and general condition of the cowsheds since the half-yearly inspection has been made.

In connection with Common Lodging Houses, during the year five of these premises have come under my supervision and have been periodically inspected.

One new house has been placed on the register; one house has changed hands; one case of overcrowding was detected and the keeper of the house cautioned.

During the year the premises where the following trades are carried on have been visited and examined with the Medical Officer:—Tripe Boiling, Ice Cream making, Public Slaughter House.

With regard to work in connection with infectious and other diseases, thirty-one rooms in various houses were disinfected after the following cases :—

17 Scarlet Fever	9 Phthisis
1 Enteric „	1 Influenza
1 Chicken Pox	1 Cancer
2 Measles	

The drains of two houses were examined and tested, and in each case serious defects were found, with the result that the drains were relaid and other necessary work carried out.

The disinfection of rooms after cases of Phthisis is still optional with the occupiers of the houses where the cases occur, and though in every instance offers are made to disinfect, too often this is either refused or ignored. The following comparative table for the last six years will shew the result of this work in my district :—

Year.	No. of Cases.	No. of Disinfections.	Refusals.
1900	42	20	22
1901	45	14	31
1902	25	9	16
1903	12	0	12
1904	20	8	12
1905	17	9	8
1906	15	9	6
Total	176	69	107

Office work has during the year demanded a considerable amount of time in regard to the keeping of the necessary books and records of work, and in correspondence.

I am, Mr. Mayor and Gentlemen,

Yours obediently,

WILLIAM B. WATSON,

Cert. R. San. Inst., Sanitary Inspector, and
Inspector of New Buildings, Workshops, and Dairies, &c.



TOWN HALL, ST. MARY-CHURCH,
TORQUAY,

9th February, 1907.

*To His Worship the Mayor, Aldermen and Councillors of the
Borough of Torquay.*

ENTLEMEN,

I have the honour to place before you my sixth Annual Report, being that relating to the St. Mary-Church District for the year ending 31st December, 1906.

NOTIFIABLE AND OTHER DISEASES.

Nineteen premises were visited. The drains of two houses were examined—one was found choked, but withstood the test after it was cleared; the other was the drain of a dairy premises which was visited in consequence of cases of typhoid occurring among the customers, and was found defective. On acquainting the owner with this matter, the drain was subsequently repaired. Disinfectants were supplied on eleven occasions.

The following table shows the number of rooms disinfected in the different diseases concerned:—

1 Diphtheria	1 room	4 Scarlet Fever	4 rooms
2 Erysipelas	1 room	2 Measles	3 rooms
2 Cancer	2 rooms	7 Consumption or Phthisis (5 deaths)	10 rooms

PREMISES VISITED ON REQUEST.

Twenty premises were visited at the request of owners, occupiers, or builders employed. Except in two cases these were villas or large dwelling houses. The drains were tested and report sent to the responsible persons. In sixteen instances defects were found. In nine houses the whole system of drainage was relaid, whilst in seven the drainage was partly renewed. Fifteen sanitary certificates were issued, and the sum of six pounds was received in drain testing fees during the year. In connection with this work one hundred and four visits, one hundred and four smoke tests, and thirty-seven water tests were employed.

COMPLAINTS.

Sixty-one different premises were visited on receiving various complaints. The following table shews the nature of the complaints :—

Defective drains	...	...	4
Choked "	...	...	15
Defective flush cisterns	...	...	3
Dirty water tanks	...	...	3
Dirty premises	...	...	4
Animal keeping	...	...	13
Overcrowding	...	...	2
Offensive deposits	...	...	11
Other nuisances	...	...	6

The following statement gives the improvements effected to abate the nuisances found :—

Drains relaid or repaired	...	...	4
Drains cleared	...	...	15
Flush cisterns renewed or repaired	...	...	3
Water tanks cleaned	...	...	3
Premises cleaned and lime washed	...	...	4
Animal nuisances abated	...	...	13
Overcrowding abated	...	...	2
Offensive deposits removed	...	...	11
Other nuisances abated	...	...	4

A total of one hundred and twenty-four visits, six smoke and four water tests were employed in the investigation of the above complaints and the abatement of nuisances found.

The Public Conveniences on Babbacombe Downs and Oddicombe Beach, and also the temporary structures for the annual Races (about which complaints have been received on former occasions) were kept under observation during the year, and remedial measures were taken when and where necessary.

NEW BUILDINGS.

Thirty-five new buildings and houses undergoing alterations and additions were visited during the year. Seven of these were large buildings or villas (including two hotels and an electric car depot). The remainder were dwelling houses of the middle class and smaller types. All drains were carefully smoke tested in every portion and the houses were finally examined as to fitness for occupation. Fourteen drainage and sixteen habitation certificates were granted.

About eight hundred feet of new sewers were laid to accommodate new buildings in various parts of the district.

A total of one hundred and twenty-six visits, one hundred and twenty-five smoke tests, and two water tests were employed with reference to new buildings and sewers.

HOUSE TO HOUSE INSPECTIONS.

Cottages at Westhill.—The drain of six small cottages, being found in a very defective condition and frequently choking, was entirely relaid, inspection chambers were constructed, and disconnecting traps and ventilation were provided. The flushing cisterns of these houses were cleaned and left in good working order.

Orchard Cottages, Hele.—These are twenty in number, and during the year the main sewer at the back of Nos. 1—10 has been relaid by the Council, and the branch drains connecting the houses therewith have been relaid and ventilated by the owner. The main drain and branch drains at the rear of Nos. 11—20 have been repaired and renewed where necessary by the several owners concerned.

Albert Street, Babbacombe.—Five houses were visited, and on examination the drains thereof were found to be partly constructed of "land pipes" and chokeages were very frequent. All five houses have now been completely redrained.

Houses in Plainmoor District.—Fourteen were visited at the end of the year with reference to w.c. accommodation. Seven were found without flushing apparatus, whilst in others this "fitting" was out of order. Up to the present two flush cisterns have been repaired and two have been fixed where none previously existed.

A total of one hundred and sixty visits, fifty-nine smoke and twenty-two water tests were employed in house to house inspections.

DAIRIES AND COWSHEDS.

The dairies in the St. Mary-Church District number 31, whilst there are 25 cowsheds. These were inspected in the month of May and again in October, with the result that they were found generally in a satisfactory condition. Many re-visits were made to ensure that the provision as to lime washing was not neglected. A total of ninety-six visits of inspection were made to cowsheds and sixty-four to dairies within the district.

As in former years, I accompanied the Medical Officer of Health on the half-yearly inspections of twenty-three dairy farms situated outside the Borough. Almost without exception these were found in a clean condition. That our visits do good is proved by the fact that the recently used lime bucket and brush are frequently found in a conspicuous position.

SLAUGHTER HOUSES.

The number of these in the district remains at seven. They were inspected periodically during the year and were found at all times free from effluvia and in a satisfactory state.

The tripe boiling establishment was also similarly inspected and nothing was found of which to complain.

BAKEHOUSES.

The number on the register is still seventeen. They were visited in due season by the Medical Officer and myself and, with one exception, were always in a cleanly state. At one the drain of the premises became choked, but, on bringing the owner acquainted with the matter, the disconnecting trap was opened and the drain cleared forthwith.

FACTORY ACT.

When the duty of inspecting workshops and workplaces was relegated to this department in 1902, the number on the list supplied to us by H.M. Factory Inspector was thirty-seven. The appended table shews the various trades involved and also the number of workshops engaged in each particular trade at the present time :—

Description of Trade.	1902.	1906.	Remarks.
Dressmakers ...	14	11	5 discontinued and 2 new ones 3 discontinued and 11 added
Laundresses ...	8	16	
Plumbers ...	4	4	
Tailors (and Outworkers) ...	3	6	
Cycle Works ...	2	2	
Coachbuilders ...	2	3	
Cabinet Maker ...	1	1	
Painters and Decorators ...	1	1	
Builders and Carpenters ...	1	1	
Bootmakers ...	1	0	discontinued

During the year the following notices were served and complied with :—

To abate overcrowding ...	...	1
Limewash premises ...	...	3
Provide sufficient w.c.	...	1
Clear choked drains ...	...	2
Cleanse foul w.c's ...	...	3
Relay defective drain...	...	1
Repair defective cistern	...	1

The greatest number of changes takes place among the dress-makers and laundresses. Very often a move is made from one room to another in the same house. It becomes necessary, therefore, to note which particular room is measured, since it is obvious that the size of one room rarely coincides with that of another, even in the same house.

I am, Mr. Mayor and Gentlemen,

Yours obediently,

H. RUSSELL SMITH,

Cert. Royal San. Inst. ; Sanitary Inspector.





BOROUGH OF TORQUAY.



METEOROLOGICAL REPORT

FOR THE YEAR, 1906.

BY

FREDERICK MARCH, F. R. Met. Soc.

Borough Meteorologist.

The Borough Observatory,

February 1st, 1907.

METEOROLOGICAL REPORT.

*To the Worshipful the Mayor, Aldermen and Councillors
of the Borough of Torquay.*

GENTLEMEN,

I have the honour to submit the following Report upon the Meteorological results of the year 1906. These are dealt with in detail, and I need not further refer to them here, except to say that each year's experience enables me with greater facility to make these facts known in the most desirable quarters.

The daily telegram in cipher to the Meteorological Office, started in June, 1905, has been continued during the year. This is communicated by the Meteorological Office to the Press Agencies, and is the means of introducing the name and claims of Torquay to a wide circle of readers, whom otherwise we could not hope to touch. References to exceptional weather in a favourable sense, such as length of sunshine or high temperatures on winter nights, constantly appear in the official daily report.

The usual telegraphic service has been maintained, and telegrams have been regularly sent to the following papers (those marked with an asterisk in the summer only):—"London Morning Leader,*" "Daily Chronicle," "Standard," "Daily News,*" "Liverpool Post," "Newcastle Chronicle," "Bristol Mercury," "Sheffield Independent," "Birmingham Post," "Manchester Guardian,*" "Bradford and Yorkshire Observer,*" "Western Morning News," and "Western Daily Mercury." Occasional reports have been furnished to the London "Tribune," "Daily Mail," and "Daily Express."

Twenty-four copies of the evening chart have again been sent by post each night to stations and receiving offices of the Great Western Railway, and have been exhibited by the officials in charge upon receipt.

The report of the 9 a.m. observations has been posted regularly in stations about the town, and a copy has been sent to the Museum. These results are also graphically shewn by means of a clock face at the Pier office, and are there studied by a great number of visitors.

Weekly reports have been furnished to the "Torquay Directory" and the "Exeter Express," and a weekly report of bright sunshine has been sent to the Meteorological Office.

The Monthly Weather Report, as presented to the Council, has been published also in the "Torquay Directory," and in the "Western Daily Mercury" and "Western Morning News." It has also been posted at the Pier office and at the Museum.

Reports have also been made monthly to the Royal Meteorological Society, and to the British Rainfall Organization.

The Daily Weather report of the Meteorological Office has been posted in the doorway of 34 Fleet Street, and is much consulted; remarks upon exceptional weather have also been posted here, and have been the means of creating interest in the minds of thousands of residents and visitors, and is spreading information as to the relative advantages of the climate of Torquay.

The usual letters of enquiry have been received and duly answered.

I am, Gentlemen,

Your obedient servant,

FREDERICK MARCH.

OBSERVATORY AND INSTRUMENTS.

The Observatory is organised and maintained by the Town Council, and is under the supervision of the Royal Meteorological Society and of the Meteorological Office.

The several Barometers, Thermometers, and Rain Gauges have been verified at Kew Observatory, and regularly examined by a representative from the Royal Meteorological Society. Readings are all corrected for instrumental errors.

The Hygrometrical Results are deduced from the daily morning readings of the Dry and Wet Bulb Thermometers by means of Glaisher's Tables.

The averages for Sunshine are the result of 18 years', for Temperature and Rainfall of 30 years', and for Pressure of 22 years' observations.

The following are the instruments and appliances in regular use, those marked with an asterisk being the property of the Torquay Natural History Society, and lent by them to the town:—

* The **Barometer** is a Fortin Standard, and is read twice daily, at 9 a.m. (local time) and at about 5 p.m. All readings are reduced to 32° F. and mean sea level, and are thus comparable with all readings similarly reduced.

* An **Aneroidograph**, by Richard Freres, gives in graphic manner the alternations of pressure.

There are two double louvred **Stevenson's Screens**, each containing **Dry and Wet Bulb**, and **Maximum and Minimum Thermometers**. The instruments are of standard make, and are so placed that the bulbs of the hygrometer are four feet above the level of the grass. One of these sets has been working throughout the year at Cary Green, where the published temperatures have been taken; the other in the Princess Gardens.

The **Rain Gauges** are of copper, by Casella, and of Snowdon pattern. They are placed, one on Cary Green, one in the Princess Gardens, with the upper edge 12 inches above the level of the ground.



A third ***Stevenson's Screen**, also double louvred, has been in position in the Princess Gardens, and has held a ***Thermograph**, or Self-recording Thermometer, and an **Ozonometer**.

The **Grass Minimum** is by Hicks, and is placed on grass in the Princess Gardens about an inch above the ground.

The **Sunshine Recorders** are placed upon the covered shelter at the southern end of the Pier deck.

They are—

(1). A Curtis' Improved Campbell-Stokes instrument (see illustration) fitted with a $3\frac{1}{2}$ -inch spherical lens of crown glass, and working on the principle of the burning-glass.

(2). A Twin Jordan Photographic Recorder, which works by the differentiation in colour effected by bright sunlight on specially prepared chemical paper.

DURATION OF BRIGHT SUNSHINE

In hours and tenths of an hour,

As recorded by the Campbell-Stokes' Standard Instrument.

1906.	Total Bright Sunshine.	Percentage Actual of Possible.	Difference from Average.	Greatest Amount in one day.	Date.	Percentage Actual of Possible.	Sunless Days.
	Hours.	%	Hours.	Hours.		%	
January ...	80·5	31	+ 17·6	7·6	19th	89	6
February ...	121·4	42	+ 39·9	9·8	20th	96	5
March	148·3	41	+ 9·1	10·5	28th	83	5
April	258·8	63	+ 82·8	12·8	16th	93	0
May	185·1	39	- 45·7	13·0	15th	80	2
June.....	261·9	54	+ 34·5	15·3	3rd	96	0
July.....	272·8	56	+ 49·8	14·3	25th	93	0
August.....	224·5	51	+ 18·0	12·4	31st	93	0
September..	229·0	61	+ 65·1	11·8	2nd	89	0
October ...	108·1	33	- 5·6	8·8	25th	88	8
November..	72·9	28	+ 3·6	7·7	2nd & 5th	95	12
December ..	63·0	26	+ 9·9	6·3	7th & 27 th	82	8
Year...	2026·3	46	+ 15·2	15·3	June 3rd	96	46

REMARKS.

The total Sunshine measured at Torquay during the year 1906, was 2026·3 hours, or, according to the more liberal calculation of the Meteorological Office, 2,028 hours. This amount has been only twice exceeded during the 18 years that observations have been taken, viz., in 1893, 2,035 hours, and in 1899, 2039.

The following table is compiled from the official record of the Meteorological Office, *which shews that Torquay was in 1906 the sunniest spot in the British Islands*, maintaining again her proud boast to the name of "Sunshineland."

TORQUAY		2028 hours.			
	Hours.			Hours.	
SCOTLAND, N.			ENGLAND, N.W.		
Strathpeffer ..	1247		Newton Rigg ..	1479	
SCOTLAND, E.			Manchester ..	1143	
Aberdeen ..	1525		Blackpool ..	1679	
SCOTLAND, W.			Southport ..	1625	
Glasgow ..	1174		ENGLAND, S.		
ENGLAND, N.E.			Tunbridge Wells ..	1953	
York ..	1384		Margate ..	1874	
Scarborough ..	1581		Folkestone ..	1979	
ENGLAND, E.			St. Leonard's ..	1991	
Clacton ..	1996		Hastings ..	1991	
Cambridge ..	1759		Brighton ..	1868	
Lowestoft ..	1988		Bournemouth ..	1969	
MIDLAND COUNTIES.			ENGLAND, S.W.		
Sheffield ..	1438		Bath ..	1808	
Nottingham ..	1453		Newquay ..	1875	
Birmingham ..	1251		Falmouth ..	1933	
Oxford ..	1710		ENGLISH CHANNEL.		
LONDON			Scilly ..	1852	
(Westminster) ..	1513		Jersey ..	2003	

It will be seen that Torquay enjoyed nearly double the amount of sunshine recorded at the dullest places, such as Glasgow, Manchester, and Birmingham, while the total was well in excess of that recorded at such well-known health resorts as Scarborough, Blackpool, Southport, Folkestone, Margate, St. Leonard's, Hastings, Brighton, Bath, Bournemouth, Newquay, and Falmouth. Jersey, which climatologically belongs to France rather than to England, takes second place with a total of 2,003 hours, and the Scilly Isles are nearly 200 hours behind the Torquay total.

In the matter of winter sunshine, so acceptable to the healthy, and so necessary to the invalid, Torquay is rivalled by her western sisters, Falmouth and Newquay, but easily holds her pre-eminence, thus :—

WINTER SUNSHINE, JANUARY-MARCH AND OCTOBER-DECEMBER.

TORQUAY ..	595	Brighton ..	555
Falmouth ..	574	Bath ..	531
Newquay ..	573	St. Leonard's ..	541
Bournemouth ..	565	Margate ..	489
Jersey ..	555	Scarborough ..	423

During the hot months of the summer, bright sunshine is not so desirable ; it is with no compunction that we then cede pride of place to, among others, Jersey, Bournemouth, St Leonard's, and Clacton.

Ten months of the year shew an amount in excess of the average, the exceptions being May and October. April and September were delightful for their brightness. The April amount, 252 hours, has only once been exceeded in this month. There was no sunless day ; the sunshine for the week preceding Easter Monday was nearly 80 hours ; on fourteen days the daily amount exceeded 10 hours, and the mean daily amount for the month was actually 8·6 hours.

September was consistently bright ; as in four other months of the year, there was no sunless day ; on ten days the sunshine exceeded 10 hours, and the mean amount was over two hours per diem in excess of the average.

Whit-Sunday, June 3rd, was, appropriately enough, the sunniest day on record, with 15 hours 15 minutes recorded sunshine, or 96 per cent. of the possible. The previous highest was 15·1 on June 27th, 1902.

DURATION OF BRIGHT SUNSHINE

In hours and tenths of an hour,

As recorded by the Jordan Photographic Twin Instrument.

1906.	Total Bright Sunshine.	Difference from Camp- bell-Stokes' Record.	Greatest Amount in one day.	Date.	Sunless Days.
January	75.7	- 4.8	7.2	19th	6
February	125.4	+ 4.0	9.2	20th	4
March	143.8	- 4.4	10.4	28th	5
April ..	250.5	- 8.3	12.3	16th	0
May	179.6	- 5.5	13.0	18th	2
June.....	250.5	- 11.4	14.8	3rd	0
July	258.0	- 14.8	14.0	25th	0
August.....	216.7	- 7.8	11.9	30th&31st	0
September.....	221.9	- 7.1	11.7	10th	0
October	98.2	- 9.9	8.3	14th	7
November	62.7	- 10.3	7.5	22nd	12
December	54.6	- 8.4	6.2	27th	10
Year.....	1937.6	- 88.7	14.8	June 3rd	46

RAINFALL

In inches and hundredths.

1906.		Total Amount.	Difference from Average.	Wet Days.	Mean Wet Day Rainfall.	Greatest fall in 24 hours.	Date
January ...	*C. G.	6·21	+2·94	20	0·31	0·77	16th
"	†P. P.	6·21		20	0·31	0·75	16th
February ...	C. G.	3·81	+1·07	19	0·20	0·90	22nd
"	P. P.	3·82		19	0·20	0·88	22nd
March	C. G.	1·00	-1·66	11	0·09	0·27	13th
"	P. P.	1·02		11	0·09	0·27	13th
April	C. G.	0·85	-1·49	10	0·08	0·44	24th
"	P. P.	0·82		10	0·08	0·42	24th
May	C. G.	1·53	-0·44	15	0·10	0·41	22nd
"	P. P.	1·55		16	0·10	0·40	22nd
June	C. G.	1·96	-0·23	7	0·28	1·28	28th
"	P. P.	2·01		7	0·29	1·34	28th
July	C. G.	0·78	-1·63	8	0·10	0·29	28th
"	P. P.	0·80		8	0·10	0·30	28th
August	C. G.	1·91	-0·78	13	0·15	0·42	1st
"	P. P.	1·93		13	0·15	0·42	1st
September	C. G.	0·95	-1·43	6	0·16	0·60	14th
"	P. P.	0·93		6	0·16	0·59	14th
October ...	C. G.	4·52	+0·60	23	0·20	0·72	9th
"	P. P.	4·49		23	0·20	0·71	9th
November	C. G.	3·48	-0·23	20	0·17	0·78	8th
"	P. P.	3·52		20	0·18	0·80	8th
December	C. G.	1·53	-2·24	18	0·08	0·30	12th
"	P. P.	1·50		18	0·08	0·30	12th
Year	C. G.	28·53	-5·52	170	0·17	1·28	June 28th
"	P. P.	28·60		171		1·34	June 28th

* Cary Green.

† Princess Pier.

REMARKS.

Dr. Hugh R. Mill, the head of the British Rainfall Organization, in an article on the "Rainfall of 1906," states that the year will probably come out as an average year, so far as England and Wales are concerned, but that "a dry belt stretched across the centre of England, from the East Riding of Yorkshire to South Devon" . . . The only district in England in which there was anything like a serious deficiency, was a narrow strip running from South Devon to Derby. Here the rainfall was less than 90 per cent. of the average."

Accordingly we had reason to rejoice, not only in a very sunny, but also in a very dry year. It opened badly, the excess of rain being in January 2·94, and in February 1·07 inches; but in the remaining months, only one, October, had a fall above the average, and the year closed with a deficiency on a 30 years' average of 5·52 inches. Drier years on record are 1887 (24"·56), 1889 (26"·40), 1892 (24"·13), 1893 (25"·83), 1896 (26"·82), 1898 (27"·62), and 1905 (27"·88). The heaviest fall (1"·28) occurred during the cyclonic rainfall at the end of June.

During the period, March to September, rain was gauged on 70 days only; and on 35 of these the fall was only one-twentieth of an inch or less. As this quantity of rain can easily fall in an hour or two, and usually falls here in the night, it is fair to say that only one day in seven was in this period "wet," in the popular acceptance of the term, and still fewer days were what would be called "very wet." A writer in the "Lancet" (Sept. 15th, 1906) singles out Torquay as "especially noted in the south-west for its very few rainy days." It will probably surprise many that the rainfall in Torquay during the summer months, June-August, was exceeded among other places at Blackpool, Llandudno, Yarmouth, Aberdeen, Harrogate, Bath, Glasgow, Manchester, and Birmingham.

Other west-country stations report totals as under :—

			"
Bere Ferrers	..	..	47·05
Launceston	..	..	59·62
Trethill, Sheviock	..	..	34·85
Penmoor, Yelverton	..	..	56·64
Polperio	..	..	38·88
Strade, Ermington	..	..	39·32
Callington	..	..	47·14
Coryton	..	..	36·28

BAROMETRIC PRESSURE

In inches and thousandths.

Reduced to 32° F. and Sea Level.

1906.	Mean of Month.	Difference from Mean of Month.	Highest Reading.	Lowest Reading.	Extreme Range of Pressure.
January	30·004	— 0·051	30·662	29·408	1·254
February	29·819	— 0·180	30·398	29·074	1·324
March	30·048	+ 0·101	30·452	29·532	0·920
April	30·097	+ 0·213	30·579	29·407	1·172
May	29·866	— 0·112	30·214	29·549	0·665
June..	30·147	+ 0·137	30·400	29·650	0 750
July	30·064	+ 0·066	30·303	29·898	0·405
August.....	30·018	+ 0·050	30·408	29·585	0·823
September	30·210	+ 0·192	30·582	29·680	0·902
October	29·861	— 0·103	30·451	29·245	1·206
November	29·836	— 0·101	30·568	29·142	1·426
December	30·031	+ 0·048	30·585	29·158	1·427
Year	30·000	+ 0·020	30·662	29·074	1·588

REMARKS.

The barometric readings for the year, as taken at 9 a.m., work out at an average of 30 inches exactly ; this is 0·020 above the average of 27 years.

There was no such abnormal reading as in 1905 (31"·075), the highest being 30"·662 on January 23rd ; the lowest reading was 29"·074 on February 11th. Extreme range of pressure was 1"·588.

The general connection between barometric pressure and rainfall is demonstrated by the following table. It will be seen that when the readings were below, the rainfall was usually above the average, and *vice versa*.

			Variation from Mean Barometer.	Variation from Mean Rainfall.
January	...	...	-0·051	+2·94
February	...	...	-0·180	+1·07
March	...	...	+0·101	-1·66
April	...	...	+0·213	-1·49
May...	...	...	-0·112	-0·44
June	...	...	+0·137	-0·23
July...	...	...	+0·066	-1·63
August	...	...	+0·050	-0·78
September	...	...	+0·192	-1·43
October	...	...	-0·103	+0·60
November	...	...	-0·101	-0·23
December	...	...	+0·048	-2·24

HUMIDITY, CLOUD, OZONE, AND WIND.

1906.	HUMIDITY.			CLOUD <i>Cloud mean</i> 1 to 10.	OZONE. Per centage of possible.			WIND. Prevailing Quarters.
	<i>Dry Bulb</i> <i>mean.</i>	<i>Wet Bulb</i> <i>mean.</i>	<i>Relative</i> <i>Humidity.</i>		<i>Mean Daily</i> <i>Amount.</i>	<i>Greatest</i> <i>Daily</i> <i>Amount</i>	<i>Least Daily</i> <i>Amount.</i>	
	°	°	%		%	%	%	
January	44·4	42·7	87	6·5	55	70	20	N.W.,W.,&S.W.
February	41·2	39·1	83	6·0	54	70	20	W.,N.W.,&S.W.
March ...	44·3	41·7	81	6·0	57	90	10	N.W. & S.W.
April ...	47·8	43·3	70	4·0	52	70	30	E., S.E., & N.W.
May	53·8	50·3	78	6·5	53	80	20	S.W. & S.
June.....	59·9	56·0	76	6·0	46	65	10	S.E. & E
July	63·1	58·7	75	6·0	48	80	10	W. & S.W.
August...	64·2	60·3	77	6·0	39	65	10	S.W. & N.W.
Sept. ...	60·9	56·7	75	5·5	44	70	10	E
October	55·2	52·7	83	6·0	42	75	10	W.,S.W.,&N.W.
Nov.....	47·3	45·8	88	7·0	42	80	10	N.W. & W.
Dec.	42·3	40·3	84	7·0	49	75	20	N.W. & W.
Year...	52·0	49·0	80	6·0	48·5	90	10	N.W.,S.W.,&W.

REMARKS.

The mean humidity of the air, varying according to the season of the year, has for many years worked out at an average of 78 per cent. of the possible. (It must not be forgotten this is a percentage of a percentage ; thus Huxley writes, "The air of England contains on an average something like $1\frac{1}{2}$ per cent. of aqueous vapour.") Some fresh factor, perhaps an unusual prevalence of westerly winds, increased this percentage in 1906 to 80. That this higher figure does not indicate a damp climate is shown by comparison with other resorts. In 1903 (the latest comparative values available at the moment) the mean humidity was at Douglas 89, at Newquay 86, at Guernsey and Bude 85, at Falmouth 84, at Brighton and Scilly 83, at Buxton, Southport, and Margate 82, at Tunbridge Wells 81, at Ilfracombe and Greenwich 80. At no station in the table quoted from was the humidity lower than 78.

The mean amount of cloud from eye-observation on a scale 0·10, indicating all conditions from cloudless to entirely overcast, was 6. It varied from 4 in April, a remarkably sunny month, with 63 % of possible sunshine, to 7 in November and December, when the sunshine was only 27 % of the possible.

The prevailing winds were westerley. Only in May, June, and September did easterly airs prevail, giving us in two of these months a low humidity, and in all a rainfall much below the average.

The mean amount of ozone, as estimated by Moffatt's Ozonometer, was 48·5 per cent. of the possible, varying from 10 per cent. to 90.

SHADE TEMPERATURES.

Taken at 9 a.m. (Local Time).

1906.	Maximum mean.	Minimum mean.	Max. & Min. mean.	Difference from Average.	Range mean.	Highest.	Date.	Lowest.	Date.
Jan. ...	50·3	40·4	45·4	+3·1	9·9	54·4	5th	29·8	24th
Feb. ...	47·0	36·5	41·8	-1·4	10·5	51·5	20th	29·6	6th
March. ...	49·6	38·8	44·2	+0·1	10·8	58·5	6th	31·6	23rd
April. ...	54·2	39·7	47·0	-1·2	14·5	64·8	13th	33·9	3rd
May ...	58·3	46·7	52·5	-0·6	11·6	69·1	14th	36·0	1st
June...	64·2	51·8	58·0	-0·7	12·4	71·2	9th	44·5	30th
July ...	69·1	55·0	62·1	+0·3	14·1	75·6	22nd	44·5	1st
Aug....	68·8	56·9	62·9	+1·4	11·9	76·0	31st	50·7	18th
Sept. ...	66·6	54·1	60·4	+2·2	12·5	76·1	7th	44·0	26th
Oct. ...	59·7	49·3	54·5	+2·6	10·4	65·9	3rd	35·1	31st
Nov....	52·2	43·0	47·6	+0·2	9·2	59·2	22nd	32·7	13th
Dec. ...	47·1	38·6	42·9	-0·7	8·5	57·1	4th	28·8	28th
Year	57·3	45·9	51·6	+0·4	11·4	76·1	Sept. 7th	28·8	Dec. 28th

REMARKS.

The mean temperature for the year 1906 was $51\cdot6^{\circ}$; this is $0\cdot4^{\circ}$ above the mean of 1905, and also $0\cdot4^{\circ}$ above the average. The mean maximum temperature was $57\cdot3^{\circ}$, and the mean minimum $45\cdot9^{\circ}$. The mean range was $11\cdot4^{\circ}$, $0\cdot3^{\circ}$ above that of 1905.

The temperatures for the four quarters of the year are as under:—

	Mean maximum.	Highest.	Mean minimum.	Lowest.	Mean Temp.
January-March	49.0	58.5	38.6	29.6	43.8
April-June	58.9	71.2	46.1	33.9	52.5
July-September	68.2	76.1	55.3	44.0	61.8
October-December	53.0	65.9	43.6	28.8	48.3

As will be seen from this table the highest reading was $76\cdot1^{\circ}$; this was taken on September 7th. The mean maximum for the holiday months of July, August and September was $68\cdot2^{\circ}$. The mean maximum for the summer months of June, July and August was 67° ; this was the same as that at Brighton, Folkestone, and Harrogate, and below that of Jersey 69° , Bournemouth 70° , Margate 69° , Clacton 68° , Bath 70° , Nottingham 71° , London 72° . It is now six years since the present writer first put pen to paper in the endeavour to rid the public mind of the fallacy that Torquay is "frightfully hot in the summer." Those who live here all the year round know perfectly well how relatively cool during the summer months Torquay is. Reasonable people would expect an equable temperature owing to the favourable geographical position of Torquay. The town is built on a peninsula and is surrounded on three sides by the sea; on the other side are the hills of Dartmoor. This peninsular position offers these advantages in summer:—(1) equalisation of temperature by reason of the conservative properties of water as regards heat; (2) constant movement of the air either as land or sea breeze; (3) cool moor air from the N.W. Unfortunately, prejudice and ignorance still largely prevail, and many opportunities of conversation with visitors from all parts of the country convince the writer that the number of such persons would be largely increased if the facts about the summer climate were still more widely circulated. The fact that during the 30 years in which temperatures have been recorded in Torquay we have never registered a maximum of 80° speaks for itself, and the following table is one more testimony that, as a seaside resort in the summer, Torquay is as cool as any, and cooler than most.

REMARKS.

During the first few days of September, the London papers were filled with accounts of a great heat wave that affected the metropolis and the greater part of the country. For three consecutive days (August 31st to September 2nd) the shade temperature rose to 91° on the banks of the lake in St. James' Park; unofficial readings in other parts of London were as high as 97°. In the country the following readings were taken:—Ponders End 95°, Cambridge 93°, Spalding 92°, Leicester 92°, Oxford 92°, Greenwich 94°, Slough 93°, Margate ("bracing and breezy") 90°, Bristol 90°, Scarborough 90°, Birmingham 86°, Folkestone 86°, Blackpool, Southport, and Harrogate 87°, Marlow 93°, Sheffield 92°, Nottingham 90°, Bath 88°. The continent of Europe suffered equally or more, at Biarritz for three days the mean rose above 95°, on two days it reached 99°; Lyons reported 91°, Paris 89°, and Brussels 87°. *On these three days the maximum shade readings taken at Cary Green, Torquay, within a stone's throw of the Strand, reputedly the hottest part of Torquay, were respectively 76°, 73°, and 74°.* Comment is needless.

As to the winter temperatures, the writer cannot do better than transcribe a note that appeared in the "Lancet," Jan. 12th, 1907, under the heading, "December at Home and Abroad." The writer says, *inter alia*, "Compared with the corresponding figures for November the temperature shows a very general and substantial decrease of warmth. London in November had a mean temperature of 47·0° F, against 37·7° during December, and nearly every other place except Scilly, TORQUAY, and Lisbon experienced a similar reduction. Scilly which, with some of the most southern resorts abroad, successfully resisted the frost, had a greater mean daily warmth than Biarritz, Nice, and Florence, while the nights were milder than those of Rome, and only slightly cooler than those at Naples and Palermo. Jersey and Torquay were also milder than Florence and the former milder than Nice, while the Devonshire resort had a mean temperature only about half a degree below that at Nice. Among the home resorts it is somewhat surprising to note the great difference in warmth between Torquay and Bournemouth." Perhaps in time the wealthy classes in England, and others who, under compulsion, seek a warm climate, with a liberal allowance of sunshine, will realise that this can be obtained within their own coasts, without the inconvenience and exposure that necessarily attend travel abroad.

The minimum reading for the year was 29° on December 28th; other minima this month were Jersey 28°, Bournemouth 24°, Bath, Manchester, and Birmingham 21°, Nottingham 16°, Nice 28°, Nice 24°, Rome and Biarritz 30°.

EXTREME TEMPERATURES :

	Max.	Min.		Max.	Min.
TORQUAY ..	76·1	28·8	Harrogate ..	87·5	19·3
Strathpeffer ..	88·6	11·2	Blackpool ..	87·2	23·2
Whitby ..	93·8	25·0	Tunbridge Wells ..	90·8	17·5
Bath ..	88·0	21·0	Margate ..	90·0	19·8
Scarborough ..	89·8	24·5	Llandudno ..	87·0	28·2
Worthing ..	77·1	25·0	Bournemouth ..	81·6	23·0
Cromer ..	93·4	20·7	St. Leonard's ..	82·9	23·0
Ventnor ..	77·8	27·2	Southampton ..	82·9	24·2
Clacton-on-Sea ..	79·0	17·5	Southend ..	88·0	20·0
Jersey ..	89·4	26·6			
Aberdeen ..	81·6	13·2	Nottingham ..	93·5	15·6
York ..	92·0	20·0	Birmingham ..	90·6	21·0
Rugby ..	92·0	18·0	Clifton ..	87·5	25·4
Cambridge ..	92·8	15·0	Oxford ..	92·0	22·0
Sheffield ..	91·2	22·9	Westminster ..	91·3	23·1
Manchester ..	90·9	21·0	Lincoln ..	92·5	18·0

METEOROLOGICAL ABSTRACT.

1906.

Highest Shade Temperature -	-	-	76°·1
Lowest Shade Temperature -	-	-	28°·8
Mean Maximum Temperature	-	-	57°·3
Mean Minimum Temperature	-	-	45°·9
Mean Temperature -	-	-	51°·6
Mean Range of Temperature	-	-	11°·4
Total Rainfall -	-	-	28"·53
Hours of Bright Sunshine -	-	-	2026·3
Sunny Days -	-	-	319
Mean Humidity -	-	-	80
Mean Ozone -	-	-	48













